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ABSTRACT

This segment of a series of studies to ascertain the degree to which visually impaired persons use the Library of Congress National Library Service for the blind and physically handicapped (NLS) focuses on the characteristics of the potential user population. Data are presented on the following topics: (1) the framework for examining the utilization of the NLS, (2) size and distribution of the household population with print limitations, (3) the analysis and impact of limitations on the process of reading, (4) demographic and social characteristics of the visually disabled, (5) activities and information seeking behavior of the target group, (6) reading habits of persons with print limitations, (7) awareness and utilization of the NLS program, and (8) satisfaction with the NLS program. The bibliography lists 290 sources. (FM)

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CHARACTERISTICS, ACTIVITIES AND NEEDS OF PEOPLE WITH LIMITATIONS IN READING PRINT

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Volume 2

From the series "A Survey to Determine the Extent of the Eligible User Population Not Currently Being Served or Not Aware of the Programs of the Library of Congress, National Library Service for the Blind and Physically Handicapped," Volumes 1-5.

Prepared for the National Library Service.

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The study was conceived in response to the need voiced by concerned individuals at many levels for documented data on the prevalence and characteristics of persons eligible for the alternative reading services provided by the NLS. The NLS, which is administered by the Library of Congress, enthusiastically sought monies to research this issue. We wish to acknowledge the continual support throughout our contract of Mr. Frank Kurt Cylke, Director of the NLS, and especially Mr. Richard Evensen, our project liaison officer at the NLS. Their careful review of the entire study process and the various drafts of this manuscript has resulted in what we hope will be a more useful report.

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CHAPTER 1

FRAMEWORK FOR EXAMINING THE UTILIZATION OF THE NATIONAL LIBRARY SERVICE

INTRODUCTION

The major purpose of this study is to explore the characteristics and interests of Americans who have physical limitations in reading regular print.* Our hope is that the study will suggest ways to improve the preparation and distribution of alternate media to regular print for the target population.

The study includes the following:

1. The identification of persons six years or older, with reading limitations in some 214,000 randomly selected households possessing telephones in the continental U.S.A.;
2. In-depth telephone interviews with 2,000 persons from among those identified in the household screenings;
3. A mail survey of 1,660 nursing homes, hospitals, schools and other residential health care institutions;
4. Site visits to 48 health care institutions across the country to examine more closely factors considered significant in the institutional mail survey; and
5. In-depth telephone interviews in 16 states with librarians who are responsible for the distribution of alternate reading media to regular print and the provision of other library services.

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*The population that has limitations in using print materials is becoming known in the field of concerned professionals as the "print handicapped." Our preference is to reserve the term "handicap" for situations where physical impairments interact with the environment in such a way as to result in greater difficulties in performing social roles for persons who have functional limitations than for those who do not. Mindful of current usage, we are introducing the terms "print limitation" and "print disability," which we feel are less pejorative.

Each of these components is treated as a sub-study which contributes to the "big picture" and is taken up in a separate volume as follows:

- Volume 1 - Executive Summary - Reading with Print Limitations
- Volume 2 - Characteristics, Activities and Needs of Persons with Limitations in Reading Print
- Volume 3 - The Role of Health Care Institutions in Satisfying the Reading Needs of Residents with Print Limitations
- Volume 4 - Current Issues in Library Services for People with Limitations in Reading Print
- Volume 5 - Design and Execution of a Study of Reading with Print Limitations.

The findings of all of the sub-studies overlap and reinforce one another, culminating in some general conclusions and implications pertaining to the national population living in private households and health care institutions.

Despite a general concensus that reading is an integral part of the educational process, and a marked decline in scores on academic achievement tests since the mid-1960's, relatively little research has been conducted on reading behavior during the period 1950-1975. This study is one of few studies in the last five years that examines the reading habits of the American public.

The charge for this study was to produce a statistical profile of the population that might make use of alternate reading media to regular print, or, as we have referred to them, "print alternatives." The term "print alternatives" includes such media as: large print; recordings; braille; another person and radio broadcasts of written materials. We were particularly concerned with that population that might utilize the print alternatives prepared and distributed by the National Library Service, the main government library program for persons with print limitations. In developing this profile, our approach has not been limited to the traditional utilization analysis. Rather, we have considered print alternatives in the larger context of living situations; we have described, for example, the effects of print alternatives on the social atmosphere of health care facilities. In addition to examining the uses of print alternatives as a means of eliciting mental function, we have contemplated the potential use of these materials in the wider process of identifying and diagnosing limitations in seeing, manual dexterity , motor capacity and endurance--all of which are required for reading print.

In light of our finding that current subscribers to the National Library Service (NLS) make up only about one-tenth of the potentially eligible population, the results of this volume are, for the most part, presented for the entire household population at risk.

The sub-study reported in this volume concentrates primarily on rates of utilization and various attributes of social and demographic status -- family income, social role in household, education and residential location. Basically, we use cross-sectional data to make general statements about the relationships between socio-demographic variables and reading behavior; one example of such a general statement is: "Better educated persons read more." A major limitation of this approach, and hence this study, is that it did not allow us to examine the process by which people decide to use or not use a given service. We did not focus on the issue of how individuals or their families decide to use or not use recorded books, nor did we consider which individuals in a household were influential in making this decision, or whether the decision was even a conscious one. A further stage of analysis that would probably be useful, therefore, is more operationally-oriented research which would allow for an in-depth assessment of the individual motivations for using or not using the NLS; this might best be accomplished by case studies in individual homes where the actual setting for reading could be assessed.

We begin our findings in Chapter 2 with the presentation of estimates on the size of the household population at risk, followed in Chapter 3 by a detailed discussion of the various components of the reading process and the types of limitations affecting this population. In Chapter 4, their social and demographic characteristics are discussed. Chapter 5 examines the leisure life styles of the household sample and their use of social services. A profile of the reading habits of the population is presented in Chapter 6. Comparisons between the NLS subscribers and non-subscribers are given in Chapter 7, and Volume 2 ends with a discussion of the satisfaction of the respondents with the NLS program. (The main findings of this report are summarized in Volume 1, the Executive Summary.)

Prior to examining the prevalence and characteristics of potential readers of print alternatives, the particular print limitations which necessitate their use and the actual use of the reading media provided by the NLS, it is essential that we grasp first the diverse functions that reading serves, and therefore, what needs print alternatives must similarly satisfy if they are to be viable substitutes for print.

Thus, before we turn our attention to the particular variables that bear on the utilization of print alternatives provided by the National Library Service, we shall consider first the reasons why people read, the process of reading generally, the particular components of that process and the physical limitations in reading regular print which impact on the reading process. Once having uncovered the reasons why people read we will be in a position to evaluate the services provided by the NLS and to assess the potential demand for these services.

One thing to keep in mind in examining the reasons why people read, is that the NLS provides print alternatives which are geared primarily toward satisfying the recreational reading needs of persons with print limitations. This fact may shed some light both on why the NLS program is used only by some segments of the eligible population, or is used only to satisfy some of their reading needs, and what sorts of programmatic modifications would be likely to increase the use of the NLS program.

Motivations for Reading

As noted above, an examination of such issues as why people read, what needs reading can potentially satisfy, and what conditions must be met in order for those needs to be satisfied, provides the necessary backdrop against which to consider the utilization of the National Library Service, and the findings pertaining to the reading habits of Americans who have limitations which either prohibit or restrict their use of regular print.

The question "Why do people read?" is really a two-fold question. First, what are the various ends people hope to achieve by reading? And second, why would an individual choose to read over doing something else, such as watching television or listening to a radio, cassette or record player, assuming that each of these activities would be equally instrumental in achieving the same ends? The first question, then, is about the sorts of goals that can be achieved by reading and the second is about the particular attributes which are unique to the reading process. The answers to both of these formulations of the question "Why do people read?" are essential for assessing the utilization of the NLS services and its potential for expansion.

Two assumptions regarding the impact of motivation on human behavior, and particularly reading behavior, which are pertinent to the question of why people read are: first, that people's behavior is a function of the way in which they view the world and their roles in it; and second, that people behave in response to both conscious and unconscious needs and strivings.

In considering the first assumption regarding human behavior, we see that reading both determines, at least to some degree, the way an individual sees the world by providing him/her with specific information about some slice of the world, and is itself determined by, or a function of, the conceptions one has of oneself, one's environment and one's place in that environment. Reading done to obtain information about the world, may be either an end in itself, or it may be perceived as instrumental in achieving some further end. One may read, for example, for the sake of learning about a particular issue or event, as a means of satisfying one's curiosity about a particular historical or political figure or celebrity, or simply to explore new terrains and expand one's horizons. Adopting a more pragmatic stance, one may read to achieve a particular goal, to gain specific knowledge and/or guidance required for making a decision, solving a problem, learning a new skill, or fulfilling certain educational or work-related requirements, or finally, as a means of reinforcing old values and attitudes or developing new ones.

At the other end of the behavior spectrum are the more expressive reasons for reading, where the end is not to obtain information, but rather to satisfy recreational needs, such as the need for intellectual and/or aesthetic stimulation, for social contact, for relaxation, for diversion and even for vicarious pleasures obtained by encountering and living with unknown persons and places, or by transporting oneself from the immediate reality of quotidian life to another century.

Though for the sake of simplicity, we have divided the reasons for reading into two broad categories--to obtain information (instrumental) and to derive pleasure (expressive)--in practice, of course, these reasons cannot be as neatly divided as all that. The motivating factors for reading need not be, and generally are not, mutually exclusive. One may simultaneously read to fulfill educational requirements, for example, and to derive more pleasure from the educational experience. This simple account is further complicated by our second assumption about human behavior, that people behave in response to both conscious and unconscious desires. And often, what appear to the conscious mind to be the motivating factors for performing a given activity would seem to have little to do with what is really going on. Without digressing too far into the realm of conjecture though, suffice it to say one's reading behavior is as much a product of these two sorts of desires as any other behavior. The various uses of reading materials are summarized in Table 1-1.

The functions of reading do not appear to differ markedly from the uses and gratifications of other channels of mass media. Hence, in attempting to answer the second question--"Why would one read rather than using some other form of mass media?"--we shall consider first the possible uses and gratifications of the other media. Laswell (1948) and Wright (1960) postulated four functions of the media: Surveillance of the environment--being the eyes and ears of society; Coordination of responses--providing criticism, advice, suggestions; Entertainment--giving pleasure and relaxation; and Socialization--providing links with the past and

Table 1-1

Uses of Reading Materials

1. TO GAIN GENERAL INFORMATION AND KNOWLEDGE.

   a. To know what is happening and what may happen. As an aid to interpreting and understanding points of view on social, economic and political issues and problems.
   b. To satisfy--to explore and extend the environment.
   c. To learn for its own sake.

2. TO GAIN SPECIFIC KNOWLEDGE AND/OR GUIDANCE RELATED TO DECIDING WHAT TO DO AND SOLVING PROBLEMS.

   a. To fulfil formal educational requirements in the process of acquiring a high school diploma or college degree.
   b. To fulfil the information and communication needs of work or a career.
   c. As a general tool of self-improvement--to learn "how to do it"; how to get a better job; how to fulfil important roles, e.g., as parents, as spouses, or as neighbors and friends.
   d. To accomplish useful ends such as finding out what products are for sale and what prices; to figure income taxes; to find a job; to get legal and civil rights; to vote.
   e. To satisfy survival needs; to learn how to cook meals appetizingly; to complete applications; and to get directions on how to get from one place to another.

3. FOR SHEER DELIGHT.

   a. For aesthetic experiences; to better understand and appreciate the arts, literature, science and philosophy.
   b. For vicarious experience; for travelling to unknown and strange lands, and for adventure.
   c. For intellectual stimulation beyond everyday happenings.
   d. For excitement.

4. TO REINFORCE ATTITUDES AND VALUES, AND TO GET HELP IN DECIDING HOW ONE FEELS ABOUT AN ISSUE.

   a. For spiritual and religious purposes.
   b. For a sense of personal security; to identify with characters (in biography, fiction and in the news); by taking vicarious pleasure in the lives of others to gain self-confidence.
   c. For the prestige value that society puts on reading; to secure self-esteem.

5. FOR RELAXATION AND ESCAPE--BY SUBMERGING PROBLEMS TO GAIN REFRESHMENT AND OBTAIN PEACE OF MIND.

6. TO PASS THE TIME--e.g., by reading in a way that is habitual and ritualistic, that is almost unconscious and easily forgotten, like reading the many parts of the newspapers, labels, billboards and posters.

7. FOR SOCIALIZATION AND ANTICIPATED COMMUNICATION--e.g., for social contact; to replace personal contact or participation with friends, family, personalities, political or sports figures; to overcome loneliness.

present. Other communication specialists might arrive at different dimensions of the media,* but it seems clear from the suggestion made by Laswell and Wright that in many important respects, television, radio and print all address the same needs. And so again the question, "What attributes are unique to the reading process?"

A few of the features that come to mind immediately are: first, that, unlike watching the television or listening to the radio, reading demands active participation in, or involvement with, the medium. Hence, it also requires a high degree of motivation not only to successfully utilize the reading matter, but also to become aware of available materials, decide which ones best suit one's purposes and to obtain them--something which may require hours of delving into card catalogues of libraries just to find the right book or article. In addition, reading requires a greater degree of concentration, patience and more highly developed cognitive abilities. These cognitive abilities are in part a function of one's native intelligence, but in part they are determined by the extent and nature of the prior education and training one has had, not only in the use of concepts--which is required by almost all of human activity--but also in the ability to translate symbols into meaningful concepts, to relate different concepts to one another and, more generally, to bring prior information to the immediate reading activity in question. Reading can also be a creative activity, stimulating one's imagination, as well as one's aesthetic sense of the beauty and one's appreciation of the nuances of language. Because reading generally elicits a higher degree of mental functioning than utilizing some other media format, it may also afford the reader a higher degree of satisfaction and sense of accomplishment. Finally, reading tends to be a more purposeful activity, requiring more discrimination than the other media forms; unlike a radio or television which many persons switch on and listen to or watch regardless of what is on, because the timing is convenient, one must actively choose what one wants to read and devote one's full attention to it. The other side of the coin, of course, is that with books one can choose what one wants to read and when one wants to read it. In general, reading is a more personal and customized activity; though two people may get vastly different things out of the same TV program, depending upon their prior experience and background, there would seem to be less variation here than with reading materials, which one can read at one's own pace, and reread as many times as one likes.

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*For example, Greenberg (1974), in a study of English school children, found seven dimensions of media gratification: learning; habit; arousal; forgetting; relaxation; companionship; and passing the time.

The particular attributes of print (as opposed to recorded versions of books) which make it especially conductive to satisfying both conscious and unconscious needs for information, behavioral guidance, socialization, relaxation and so on are stated in Table 1-2. Among these, the "personal" and "private" nature of reading are primary. The requirement for the individual's active cognitive and physical participation are met with the medium's permanence, and its advantages of random access and recall. (The attributes of braille and recorded versions of printed materials are taken up in Chapter 6, where we discuss in depth the reading habits of persons with print limitations.)

Table 1-2

Characteristics of Ink Print as a Medium

PSYCHOLOGICAL

1. It is a private and personal mode of reading.
2. It elicits the reader's active participation by stimulating him/her to form ideas and to think about them.
3. It provides an opportunity for the exercise and development of intellectual capabilities such as memory, abstract reasoning and critical thinking.
4. It stimulates the use and development of the imagination.
5. It can be adapted to social uses such as reading aloud and sharing reading experiences.

COMMUNICATION

6. Ideas can be presented at varying levels of complexity to meet the capabilities and interests of people of different ages, skill levels and intelligence.
7. It is not dependent upon audition or tactile ability.
8. It allows for precision in the communication of ideas, and has standard forms.
9. It provides a highly intelligible and concrete basis for communication, and, as such, can be reviewed or referred to as needed.
10. It is compatible with other forms of expression such as writing and speaking.
11. It is durable, and forms a permanent record.
12. It lends itself to many types of expression in and of itself: i.e., poetry, drama, advertising and text.
13. It is portable and can be performed in a variety of settings.
14. It is almost universally taught and there are frequent opportunities to practise it; it is a convention of communication adopted throughout society.

ACQUISITION/THE TASK OF USING

15. It allows flexibility, in that users can control the rate of input (reading speed) according to personal needs or tasks.
16. It can be presented in a variety of formats: tables, graphs and texts; these can also be varied in size and style.
17. It can be organized so that the reader may scan, skip, edit or otherwise focus on information needed.
18. It affords random access to written information, and lends itself to attracting readers in virtue of headlines, magazine covers and abstracts.
19. It is convenient for note-taking and duplication.
20. It is responsive to variations in recall and memory function, because the readers can refer to previously read sections as needed.

Having just noted the many reasons for and rewards that can be derived from reading the question arises: Why is it that more people do not spend their time reading regular print? According to data provided by Yankelovich (1978) on the general population, low motivation and insufficient time seem to be the two most significant factors. Poor eyesight ranked third among the reasons for not reading print: one person in seven cited vision as a problem. (See Table 1-3.) As we shall see, these three factors are also critical for persons with limitations in reading print.

Reading as a Process

In contrast to most research on reading habits, which is restricted to a study of the cognitive aspects of reading,* this study emphasizes the importance of the context in which reading occurs, the purposes for which reading is performed, and the physical capacities required to effectively utilize the various reading media.

Every reader must have a minimum of training or education in order to decode the written marks and symbols into intelligible words and concepts, and each reader must have access to sources of reading materials. Environmental conditions that are prerequisites to reading include such things as adequate lighting, relative quiet and a lack of distractions. And finally, each reader must have enough time to read. These are all necessary conditions, but they are not sufficient; to these must be added physical capacity and motivation.

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*Lyman (1972), for example, suggests that there are six functional elements of reading: the accurate reception of external stimuli; perception; association; assimilation; analysis and evaluation. Using a somewhat broader approach, Hatt (1976) identified four attributes that distinguish habitual readers from non-readers: literacy; access to reading matter; minimum environmental conditions; and time to read.

Table 1-3

Major Reasons for Non-Reading in the Household Population - 1977

Reasons	Percent of all Reasons for not Reading in General*	Percent of all Reasons for not Reading Books*
Don't like to read/ not my thing	28	30
Don't have time	23	15
Poor eyesight	14	6
Just not interested	13	12
Don't read well/slow reader/ not much education	13	6
Work responsibilities are more important	12	10
Home/family responsibilities	10	11
Prefer TV/ get all I want from TV	10	11
Prefer other leisure activities	6	9
Reading puts me to sleep	3	3
Don't read English	3	1
Prefer newspapers	2	**

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* Multiple reasons were accepted, consequently the percentages add up to more than 100%.

**Less than 0.5%.

Source: Yankelovich, Skelly and White (1978).

The functional elements of reading depend, then, not only on the intellectual capacities (i.e., the ability to assimilate material, make associations, analyze and evaluate what one has read) and the degree to which reading skills have been learned, but are also fundamentally determined by the purposes or motivation one has for reading and the physical ability one has to control and utilize the medium of expression.*

Reading can be thought of as a process, or an ordered sequence of steps. An individual first develops a reason to read, then seeks out and obtains materials, and then operates on the reading medium. He/she varies the rate of input of information from the medium (e.g., the speed of turning the pages) based upon the speed with which the material is absorbed, and his or her facility in operating on the medium. Finally, the absorbed material is utilized or shared with others, either immediately or after a period of storage and absorption in the mind. Conceptually, eight distinct components have been identified in the reading process. These components are:

1. Motivation -- a reason to read;
2. Awareness -- knowledge of what reading materials exist;
3. Access -- the ability to obtain and dispose of materials;
4. Selection -- the ability to choose among reading materials;
5. Operation -- the ability to control a particular reading medium, i.e., to see print, hold a book, turn a page, hear a recorded story or read aloud; to feel a braille page, and to sit up to do these things;

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*To illustrate, the ability to hear and read aloud, as well as silently, affect reading achievement. For a discussion of altered reading behavior, see Volume 5 on methodology.

6. Endurance -- the capacity to read for more than a few minutes at a time without weakness or fatigue;
7. Comprehension -- the mental ability to perceive, understand and remember words, phrases and ideas; and
8. Utilization -- the ability to share or utilize reading experiences.

The value of analyzing the activity of reading into eight separate components will become apparent in Chapter 3, where we take up the issue of how specific limitations in reading regular print impact on the reading process.

LIMITATIONS IN READING REGULAR PRINT

As we just saw, one of the primary reasons for not reading print is on account of poor eyesight or visual limitations. A number of other physiologically-based limitations in reading (or using) regular print may also impact on any or all of the components of the reading process.

The specific reading disabilities that we explored in this study included limitations in:

1. Seeing well enough to read regular print;
2. Holding a book or magazine;
3. Turning pages;
4. Sitting up to read;
5. Weakness;
6. Learning/Comprehension.

Some other limitations which were thought to compound a reading disability, if they were present in conjunction with the primary limitations in reading regular print materials were the following:

7. Hearing;
8. Mobility;
9. Other serious non-reading conditions; and
10. General health.

As with the specific limitations in reading print, a number of interactions operate between the compounding factors. These are taken up in some detail in Chapter 3.

THE ACCESSIBILITY OF PRINT ALTERNATIVES

The utilization of alternative reading media to regular print has a variety of determinants, the most fundamental of which, perhaps, is the accessibility of print alternatives.* Alternatives to print can be obtained from a variety of organizations for whom the preparation of such materials is their main objective, as well as from services which prepare alternatives to print as one of the many activities which they perform. In the United States, there are presently several hundred organizations that prepare and distribute print alternatives. (See Chapter 6 for a list of some of these organizations.) Although both commercial and non-commercial organizations provide print alternatives, the major suppliers of braille and recorded materials are non-profit organizations which receive tax support. A number of church and voluntary organizations are also important suppliers. For example, Recordings for the Blind (RFB), a New York-based non-profit agency will record virtually any materials that the requestor supplies two print copies of, at no cost to the requestor. Used by some 25,000 students and professionals, RFB records about 5,000 titles annually, and is expanding. The American Printing House for the Blind, also a not-for-profit organization, prepares almost all of the braille and large print text books used in public schools by children who require alternatives to regular print. The Braille Institute of America, a Los Angeles-based philanthropy, provides a braille custom service similar to that of RFB. In FY1978, the Braille Institute hand-transcribed 114 different titles upon request. A number of other organizations specializing in braille, such as the National Braille Association (NBA) and numerous other church groups, also transcribe braille materials on demand. The NBA Braille Book Bank, for example, is attempting to expand its textbook services and to meet the needs for shorter-lengthed recreational and professional materials. Of the "official" sources considered, the NLS and the coordinated network of libraries--both of which rely largely on public monies to provide recorded and braille materials that are likely to be of communal interest--are the primary purchasers and distributers of print alternatives.

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*As with everything else, the labor involved in making print alternatives accessible to eligible persons is divided. The stages involved, in more or less the sequence in which they occur, are as follows: recognition of a particular need for print alternatives; procuring the funds either from Congress, private individuals, foundations or other governmental offices such as the Office of Education; deciding or planning what books, magazines and/or news articles ought to be prepared, in what format, and in what volume; producing the materials or contracting the work out to be produced elsewhere; and finally, distributing the finished product. In some cases, more than one of these functions, or even all of them, are performed by the same organization; the NLS, for example, provides funds for the preparation of materials, decides what materials ought to be produced, and distributes the finished product to regional and subregional libraries, which, in turn, distribute them to individual, eligible subscribers. In other cases, each stage of the production process may be accomplished by a different organization.

One of the most exciting and promising innovations in the expansion of the availability of print alternatives in the 1970's is the reading of newspapers, magazines and books over the radio. As of May 1979, some 65 local radio reading services (RRS) across the country now have a combined listenership of approximately 50,000 persons--most of whom are also subscribers to the National Library Service. The National Public Radio's new service for persons with print limitations offers a great potential, through the use of satellite transmission, for the timely exchange of local and special national programming. Another such development that is in the works now is a computerized machine which can actually read printed materials aloud in synthetic speech. With the growth of technology, new ideas for viable alternatives to print and for improvements in the production of old ones are proliferating at a steady pace, and should be expected to continue into the 1980's.

It should be clear from the foregoing that one emphasis of our study -- the awareness and utilization of the National Library Service "Talking Book" and Braille program -- is also broadly applicable to other providers of print alternatives. While points made in this discussion may be broadly relevant to other social agencies like Recordings for the Blind, or the rapidly developing network of radio reading services, no systematic treatment is given. Second, the data are not prescriptive and their use is limited to policy analysis, planning and administration.

FACTORS AFFECTING READING AND LIBRARY USE

In this section we shall look at the set of factors or variables that pertain to reading activity and library usage among persons with print limitations and those without such limitations. We hope to show how these factors help to differentiate and predict the utilization of print, as compared to other communication media, including print alternatives. Simple explanations rarely hold up, however, and in attempting to understand the complex context in which people come to read with alternative media to regular print, they should not be expected. McKinlay (1970), for example, has shown that people may use a given service for many different reasons, and conversely, they may use many different services to satisfy the same need.*

One critically important factor bearing on the utilization of the NLS is the process by which persons certified as legally blind are referred to the Talking Book and Braille program. It has only been since 1966 that persons with physical limitations in reading other than seeing problems have been eligible to use the NLS program. Ignorance, awareness, distrust, proximity and availability of services, and financial cost have varying degrees of relevance to utilization rates.

Although expense may not be a major barrier to using print alternatives generally, and the National Library Service in particular, since there is little or no dollar cost to the recipient of most print alternatives, the fact that there is no cost to recipients of NLS services may be a disincentive if the program is viewed negatively as a welfare service, a service for the poor, or primarily a service for any "deviant" group. It is possible that our middle class culture of well-being engenders a distrust in anything free. Whatever the cause of the distrust, this wariness of social services appears to be present among adventitiously reading disabled persons and their families, whose belief systems are often set prior to the onset of a reading limitation. Thus, one way of viewing some of the reading disabled is as hidden, unmotivated or unreachable. Attributing the low utilization rates of the NLS to the wariness, disinterest or unapproachability of the non-users would seem, however, to sidestep the issue of how to increase the use of the NLS. What appears to be more fruitful is to identify the structural and programmatic elements of the NLS which bear on the utilization rates, and which may be exploited in some cases, or perhaps modified in others, so as to convert non-readers or sporadic readers into avid readers.

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*One of the less intuitively obvious reasons for using a library is to reduce one's social isolation, yet some librarians have suggested that many persons with reading limitations call the library to do just that.

As we hinted earlier, the premise underlying this approach is that the responses individuals make when asked why they use any media at all, and what gratifications or rewards they derive from one medium as opposed to another, are conditioned by their social roles, their stage in the life cycle and their physical abilities, as well as the manner in which the medium is supplied. If this premise is true, the demographic, social and organizational considerations should all be helpful in explaining patterns of media utilization--including reading and use of libraries. We will consider these under the headings of predisposing, enabling and organizational variables. (For a review of conceptual approaches, see Ward, 1977; Suchman, 1964, 1965; and Anderson, 1973.)

Table 1-4 and Figure 1-1 outline the next issues to be discussed, and may be a helpful reference.

Predisposing Variables to Read and Use Libraries

Attitudes and Beliefs--We said in the preceding section that an individual's strivings, interests, gratifications, frustrations, distrust and ignorance--the entire constellation of values and beliefs--are important predisposing factors for the use of media. (See Turner, 1978; Leavitt, 1979.) But none of these factors are unique to printed materials. More particular predisposing factors are: the prior frequency of use of reading materials and the individual's satisfaction with the materials and the organizational and "lay referral systems" (non-professional sources of help) providing them. Both of these factors may modify the individual's predilection for reading and for purchasing books as opposed to using libraries. One's awareness of, and receptivity toward, public services and the acceptance of one's limitations or physical disabilities are similarly variables which together with the attributes of age, sex, education, income, etc., influence one's behavior.

Age and Sex--Age and sex are primary determinants of community and household roles (Binstock and Shanas, 1976). Age is also a significant determinant of chronic health conditions and physical limitations, such

Table 1-4

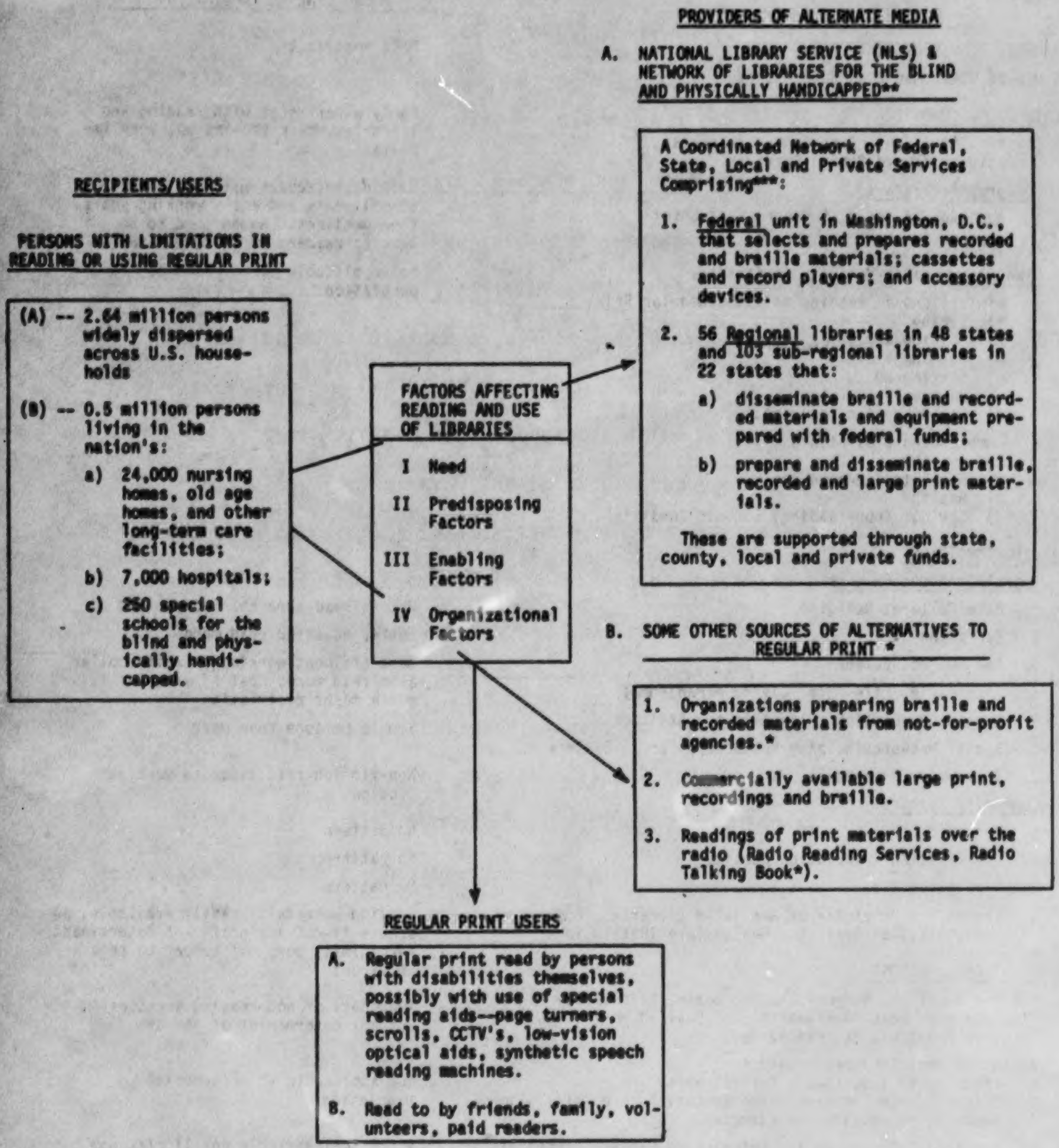
Factors Pertaining to Reading and Library Usage

FACTORS AFFECTING READING AND USE OF LIBRARIES	ESTABLISHED SIGNIFICANCE OF FACTORS AMONG GENERAL POPULATION*
I NEED	
1. Motivation/Reasons to Read	Most important
2. Use of Other Media as Substitutes	
II PREDISPOSING CONDITIONS	Early experiences with reading and libraries while growing up, very important
A. Beliefs, Attitudes, Experience, Awareness, Receptivity Toward Public Services	
B. Demographic Factors	Reading increases with age through school years and early working years, then declines. Women tend to be heavier readers of leisure material
1. Age, Age of Onset, Suddenness of Onset	
2. Sex	
C. Disability/Health/Mobility Limitations	Not applicable to able-bodied population
1. Limitations in Reading or Using Regular Print	
a) Seeing	
b) Holding a book c) Turning a page │ Dexterity	
d) Sitting up	
e) Weakness-endurance	
f) Comprehension/Learning	
2. Compounding Limitations	
a) Hearing	
b) Mobility/Independence	
c) Health	
d) Serious (non-reading) Chronic Conditions	
III ENABLING CONDITIONS	
A. Social/Economic Factors	
1. Race/Culture, Religion	Whites read more than non-whites
2. Education	Better educated read more
3. Income, Occupation	More affluent working in white collar jobs read more; cost of material is not a major restriction
4. Life-style, Life-role, Living Arrangements	
5. Family Composition, Situation and Attitudes	Single persons read more
6. Social Networks/Helping Networks/Referral Systems	
7. Interests, Experience	Non-fiction read twice as much as fiction
B. Community Factors	
1. Region	No pattern
2. Urbanization--population density	No pattern
3. Population Size	No pattern
4. Extent and Proximity of Available Libraries, Bookstores, Rehabilitation Services, Health Care Institutions	Reading materials readily available, so access is not a significant determinant --Proximity does not appear to be a deterrent
IV ORGANIZATIONAL FACTORS	
1. Library Staffing, Budgets, Hours, Goals, Eligibility Requirements, Fees, Availability of Desired Materials, Services Provided, Accessibility	Awareness of non-reading services important determinant of non-use
2. Mechanism that Services Provided a)--directly to individuals for libraries b)--through collections supplied to health care institutions, schools, rehabilitation agencies	Not applicable to able-bodied population
3. Orientation of Providers and Interaction Between Dispensers and Recipients of Reading Services	A critical variable for library use

*See Chapter 6 for further details.

Figure 1-1

Readers with Print Limitations and Providers of Alternate Media



RECIPIENTS/USERS

PERSONS WITH LIMITATIONS IN READING OR USING REGULAR PRINT

(A) -- 2.64 million persons widely dispersed across U.S. households

(B) -- 0.5 million persons living in the nation's:

a) 24,000 nursing homes, old age homes, and other long-term care facilities;

b) 7,000 hospitals;

c) 250 special schools for the blind and physically handicapped.

FACTORS AFFECTING READING AND USE OF LIBRARIES

I Need

II Predisposing Factors

III Enabling Factors

IV Organizational Factors

PROVIDERS OF ALTERNATE MEDIA

A. **NATIONAL LIBRARY SERVICE (NLS) & NETWORK OF LIBRARIES FOR THE BLIND AND PHYSICALLY HANDICAPPED****

A Coordinated Network of Federal, State, Local and Private Services Comprising***:

1. Federal unit in Washington, D.C., that selects and prepares recorded and braille materials; cassettes and record players; and accessory devices.

2. 56 Regional libraries in 48 states and 103 sub-regional libraries in 22 states that:

   a) disseminate braille and recorded materials and equipment prepared with federal funds;

   b) prepare and disseminate braille, recorded and large print materials.

These are supported through state, county, local and private funds.

B. **SOME OTHER SOURCES OF ALTERNATIVES TO REGULAR PRINT ***

1. Organizations preparing braille and recorded materials from not-for-profit agencies.*

2. Commercially available large print, recordings and braille.

3. Readings of print materials over the radio (Radio Reading Services, Radio Talking Book*).

REGULAR PRINT USERS

A. Regular print read by persons with disabilities themselves, possibly with use of special reading aids--page turners, scrolls, CCTV's, low-vision optical aids, synthetic speech reading machines.

B. Read to by friends, family, volunteers, paid readers.

* Described in Chapter 6
** Described in Chapter 7
*** These figures were correct as of September 1979.

as visual impairment, and hence, of the ability to read print.* Since the average life span of women in the United States is now about 76 years, while that of men is only 68 years (Social Indicators 1976, p. 190), the likelihood is that more women will require alternatives to regular print than men. Hence, on a biological basis alone, age and sex are predisposing factors affecting the amount of reading one is likely to do, as well as the type of media preferred to do it. In addition, Greenberg (1974) has shown that audiences of different ages have different motivations and receive different gratifications from the same medium. It is also likely that the ability to discriminate among media types, and to decide which are more rewarding for different needs, may also change with age. (The specific nature of these changes will be taken up in Chapter 4.)

Reading Limitations and Compounding Physical Restrictions--The number and severity of physical limitations in reading or using regular print, along with the presence of compounding limitations in hearing, manual dexterity, mental function, general health, and mobility are predisposing variables that help define the perceived need for print alternatives and other mass media.

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*A number of physiological changes in the eye occur normally with age. These include: distortion of the lenticular and corneal surfaces; thickening and yellowing of the lens; slower pupil dilation; reduced elasticity of the eye muscles; reduction in fluids produced inside the eye; disappearance of the rods and cones. These changes result in less visibility and legibility of printed materials since: less light enters the eye and reaches the retina, and hence, more illumination is needed to see as well as when one is younger; perceived colors are altered due to lens coloration; the retinal image is distorted and farsightedness occurs; accommodation and light adaptation are slower; sensitivity to glare is increased. Whether these changes occur more rapidly for females than for males is not clearly known.

Enabling Variables

Social and Cultural Factors--A broad set of factors relating to the individual's social and cultural milieu and family and residential setting (including institutions) are often thought of as variables which facilitate or limit (i.e., enable) reading and the use of other media and social services. Usually included within the set of "social structural" variables are: race,* occupation, education, stage in life cycle, living situation and style. "Cultural" variables encompass factors such as: country of birth, native language and religion. The "family" variables include: income, socio-economic status, household composition, family role, social networks, family and kinship attitudes and helping arrangements.

Community Variables--A number of factors related to the environment in which mass media are made available and supplied are also enabling variables. Region, community size and degree of urbanization or cosmopolitanism affect proximity to media, and, therefore, accessibility. These community variables take into account not only the availability of home delivered newspapers and libraries, but also the alternative sources of reading materials, such as book stores, and of potential substitutes to reading, e.g., the number and quality of reception of radio and television channels. Radio Reading Services (RRS) may also substitute for personal reading.*

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*Race is likely both a biological and a cultural determinant of the use of print alternatives. On one hand, since the life expectancy of blacks at birth is seven years less than whites (64 years to 71), race may be predisposing to reading limitations. On the other hand, education is closely associated with environmental and cultural influence.

Organizational Variables

The patterned ways in which dispensers and recipients of products and services interact are called the organizational factors. (See Litwak and Meyer, 1967.) In the context of media usage, "dispensers" and "recipients" include, respectively, newspaper publishers and their subscribers; TV and radio management, producers, performers and their audiences; librarians and library card holders; and nursing home Activity Directors and residents.

The organizational factors are of two sorts: formal and informal. The formal factors consist of the explicitly stated structural and programmatic elements, or rules and regulations of the particular service or organization in question. They include such things as the sponsorship of the service, the legislative mandate, the goals and priorities, the budget and methods employed to carry out those goals, and the prescribed ways in which the dispensers of the services and the recipients are to interact. With respect to library services, the formal organizational factors relate to the government body administering the library, the eligibility criteria and how they are applied, the fees, the hours of operation, the geographic accessibility, convenience, timeliness and adequacy of the service, the staffing, funding, paperwork, the set of services provided, and finally, the formal mechanisms by which readers may influence the delivery of library services. These elements express the formal bureaucratic ideology and political structure, and constitute the attitudinal context in which the desired products or services are provided.

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*The RRS typically transmit as a sideband to local FM stations under Subsidiary Communications Authority (SCA) of the Federal Communications Commission. Now operating in 26 states, the RRS have some 41,000 listeners. The services normally utilize special SCA receivers that cost in the range of 50-75 dollars.

One of the primary concerns in a nursing home or other housing facility is the potential conflict between the priorities of the nursing home administrators and those of the residents: nursing home administrators are often most concerned with cost containment and acute health care needs; from their point of view, residents' needs for rehabilitation and mental stimulation may be regarded as luxuries for which there is only limited cost reimbursement. Similarly, in library settings, whether for the sighted population or that with print limitations, there may be a conflict between the librarians' or planners' perception of the needs of their clients and the actual needs of the library users. (For persons with print limitations such a conflict would have more serious repercussions, because such persons are obviously more dependent upon library resources for reading materials than their sighted counterparts.)

Within two organizations with precisely the same formal organizational factors, there is much room for variance vis-à-vis how effectively the particular functions get carried out. This variance may be attributed to what we have called the "informal" organizational factors. The informal factors encompass such things as the personalities, socio-economic class and general willingness to help of the service providers. These less predictable, less controllable factors may have as profound an impact on the operation of a program as the more formal factors. One way in which such factors come into play in a nursing home setting may be seen in the following illustration: many of the nurses' aides and other staff members who have the most direct contact with residents come from lower socio-economic classes, and consequently, may have had fewer positive reading experiences than the residents. Their relative lack of appreciation of reading may well have an adverse effect on the distribution of print alternatives to the residents.

In a library setting as well, the receptiveness of the librarians to the readers' needs, their willingness to accept readers' suggestions for new titles or service innovations, and to help readers obtain materials is of paramount importance. We can easily imagine two NLS regional libraries, governed by the same rules and regulations and with the same number of interested, eligible subscribers, one of which has a large and stable clientele and the other of which is used only infrequently. In such a case, a reasonable place to look for the source of the discrepancy would be in the philosophy and attitudes of the librarians; one might have a responsive, helpful staff willing to look up and try to locate obscure books or references for the subscribers, or to duplicate extra copies of recorded versions of books, while the other might have unresilient librarians who extend themselves no further than they are required to according to the prescribed procedures of the library.* A rehabilitaton orientation might result in one response, an administrative and fiscal orientation might result in a different one.

The organizational factors lead to some questions, such as: Are the service norms of libraries or radio reading services those of the typically middle-class providers or those of the recipients? Is the recipient embarrassed or overwhelmed by the procedural requirements for utilization? Is the provider paternalistic in manner? Is there meaningful formal input by the recipients into the organization and administration of the service? In sum, does the behavior of the practitioners encourage or discourage participation? These issues are taken up more fully in Volume 4.

CONCLUSION

Librarians of public libraries have become increasingly concerned in the past ten years with justifying the importance of library services to those who are responsible for funding and using them.** The basis for this concern may well be that, despite the increasing numbers of

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*In her 1967 study of library usage in the general public, Bundy found that reasons for library non-usage ranged from adverse comments about unpleasant librarians to complaints about the insufficient variety and quantity of books. She concluded that the long-standing promise of these institutions was unfulfilled. Too often, libraries, in trying to appeal to the masses, spread their scarce resources too thin. By diversifying their commitments they have lost the interest of the population for whom the traditional library had any appeal.

**See Lancaster (1977).

libraries,* a primary function of the library, namely to provide timely information to users, is increasingly being performed by other segments of society, such as the mass media and computerized information centers.

Unlike public libraries for the sighted and able-bodied segments of the population, whose role in meeting the reading needs of Americans seems gradually to be taken over by other facets of society, libraries serving persons with print limitations are now more active than ever. So, too, are the other providers of alternate media to print. Thus, happily, the ever increasing needs of this special population for reading materials are being satisfied more fully than they have ever been before. This study, itself, is evidence that the National Library Service is concerned about developing directions for the future and is using one of the organizational means available to it to research issues and perhaps reevaluate its current position on these issues.

As with the libraries for sighted persons, there is an ongoing need for libraries serving persons with print limitations to keep abreast of the times, so as to continue to meet the growing needs of this special population, and to ensure their continued vitality in American society. One organizational issue that may bear on the continued use of the NLS is the decision that NLS central and the network of 158 regional and subregional libraries make as to whether to continue to fund their present programs, or to expand their present services to include more employment and educationally-oriented activities. One result of opting for the latter course might be an expanded availability of informational reading materials prepared with government funds. This issue is a particularly important one, because, unfortunately, there has not been the burgeoning of information services for the population with print limitations that there has been for the sighted population. Nor has there been a comparable growth in the number of places to quickly and easily obtain suitable reading materials (i.e., print alternatives).

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*The number of public libraries rose from 7,190 in 1970 to 8,540 in 1976, and the number of special libraries has jumped from 4,277 to 6,563 between 1970 and 1976 (U.S. Bureau of the Census, 1978).

Another consequence of a decision to shift the orientation of the National Library Service, should the Congress make such a decision through a change of legislative mandate, might be the redesigning of the cassette players provided by the NLS so that they might be used for recording purposes as well as playback, or so that they might include SCA radio receivers, now employed by stations providing special programming to persons with print limitations. Given its mandate, decisions at the level of the National Library Service, itself, might expedite the development of paperless braille, lighter high fidelity playback equipment, a greater availability of more timely braille and recorded titles, and enhanced and more accessible information and referral services. Each of these developments could help to increase still further the already increasing use of the National Library Service.

CHAPTER 2

SIZE AND DISTRIBUTION OF THE HOUSEHOLD POPULATION WITH PRINT LIMITATIONS

INTRODUCTION

In order to gauge the total resources that might appropriately be committed to the National Library Service program, and to assess how well it was meeting its legislative mandate to provide reading alternatives to regular print for all who need them, the National Library Service needed to know the size of the population with limitations in reading or using regular print. The NLS also wanted to understand more fully the social and demographic characteristics and the reading habits of the population potentially eligible for its services and to determine the ways in which eligible non-users of the program differ from current subscribers. With this information, the Library might better assess the efficacy of its current programs and make any necessary changes to improve its services and reach new subscribers.

The overall household study was designed as a two-stage sampling process. In the first phase, a large representative national sample would be asked questions about their ability to read and use regular print materials. The results would provide data on which to project the size of the national and regional population having reading limitations and to prepare other global measures such as prevalence and prevalence rates in relation to a few key predisposing, disability and community factors.* The responses to the Phase I survey were also to provide sufficient information to develop a sample of the target population who could be reinterviewed at a later date. This chapter presents findings from some 214,000 national telephone interviews conducted during 1977 in which individuals were asked questions about their ability to read and use regular print. These Phase I interviews served as "screenings" of the population at risk and consequently, this section of the study is referred to as the screening study.

The findings reported in the rest of this volume are based on 2,041 "call-back interviews," i.e., subsequent telephone interviews with persons first identified in the household screenings. The sample selected from the screenings was stratified by primary reading limitation (seeing, physical, learning), age group and region. All persons with primary physical and learning problems, identified in the screenings, and about one-third of those with primary problems in seeing were included in the sample. The results were then weighted back to the proportions found in the screenings. The basic weighted sample size was 7,321, which consisted of the 7,585 persons identified in the screenings, less about 250 respondents who refused to describe the specific nature of their limitations and indicated that they did not wish to be called back. (For details on the design of the study, see Volume 5.)

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*The definition of terms used and the methods by which the data were collected, analyzed and projected to the nation are detailed in Volume 5. Throughout, percentages have been rounded and total may, therefore, sometimes be 99% or 101%.

PREVALENCE OF THE POPULATION WITH PRINT LIMITATIONS

Approximately 2.64 million persons six years or older were estimated to have either permanent or temporary limitations in reading or using regular print materials. These data result in a prevalence rate of about 14 per 1,000 persons. The findings are projections derived from three independent national screenings of approximately 70,000 households each. In total, over 600,000 persons were screened for limitations in reading or using regular print.

About three out of every 1,000 households interviewed reported the presence of at least one family member, six years or older, with limitations in using regular print materials. On the average, 1.08 persons per household were found to have limitations (7,585 persons in 7,023 households). Projected nationwide, these 1977 prevalence rates indicate that about 2.45 million households had persons with reading limitations.

In about seven percent of the households, two or more persons had limitations in reading print. Households in which three or more persons had limitations were less than one half of one percent nationally, and less than one percent in any region.

PREDISPOSING FACTORS

Age and sex are the key biological factors influencing the predisposition of the national population to limitations in reading. Consequently, they are considered first.

Age

The age distribution of persons with print limitations is given in Table 2-1. Figure 2-1 shows this age distribution in relation to that of all persons living in U.S. households during 1977. It is immediately obvious that persons with print limitations are, on average, much older than the population as a whole. Among persons with print limitations, the average age is 56 years. Half of the population is above age 61 years, twenty-five percent is under age 40, while 25% is above age 75. For the U.S. population as a whole, half of the population is above about 28 years and only 25% are above 50 years old.

The preponderance of older persons with reading limitations is a direct consequence of the association of severe visual impairment with the process of aging. A variety of other diseases and conditions afflicting persons above 45 years old such as strokes, arteriosclerosis, arthritis, reduced mental functioning, and diabetes contribute to the skewed age distribution.*

Overall, 47% of the persons reporting reading limitations were 65 years old or over: this represents an age-specific prevalence rate of 55 per

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*See, for example, Birren and Schaie (1977); also Carpenter, McArthur and Higgins (1974), and Riley and Foner (1968).

Table 2-1

Prevalence and Prevalence Rates by Age for Persons with Limitations in Reading or Using Regular Print

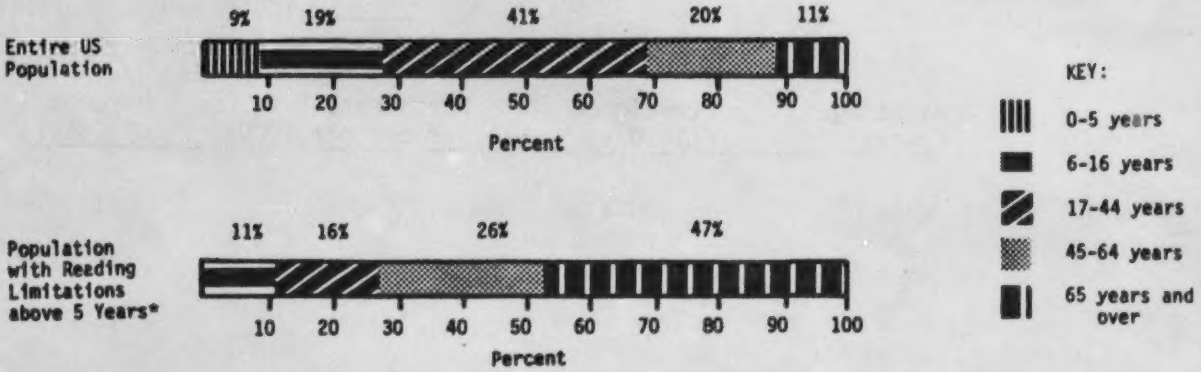
U.S.A. - 1977*

Present Age (years)	Prevalence (1000's)	Prevalence Rate (persons per 1000)	Percent of Total
6 to 16	290	6	11
17 to 44	425	5	16
45 to 64	685	16	26
65 and over	1,240	55	47
All ages (over 6 years)	2,640	14	100

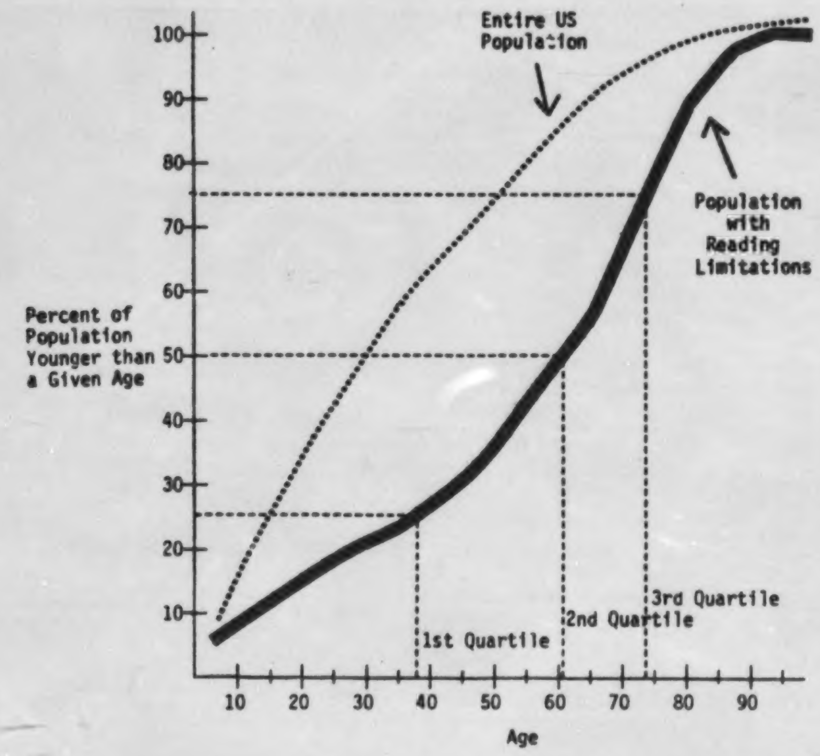
*n = 7585

Figure 2-1

A. Age Distribution of Persons with Limitations in Reading Regular Print Compared to Age Distribution of the U.S.A. - 1977



B. Cumulative Age Distribution of Persons With Limitations in Reading Regular Print Compared to the Cumulative Age Distribution of the U.S.A. - 1977



*In considering the population with reading limitations we have excluded persons under six years of age, because persons generally do not begin to read before the age of six.

1,000 persons. The school-age 6 to 16 group has a prevalence rate of 6 per 1,000. The working-age groups of 17-44 years and 45-64 years show prevalence rates of 5 per 1,000 and 16 per 1,000 persons respectively.

In a society where the population above 65 years is projected to increase by 36% over the next 20 years, the age-specific prevalence rate data indicate the need for library administrators to plan for increased future demands--up to 3.5 million persons by the year 2000 as seen below.

Age	U.S. Population in Year 2000*	Prevalence of Population with Limitations in Reading Regular Print*
	(In 1000's)	
6-16	43,481	261
17-44	104,394	522
45-64	59,132	946
65 Years and Over	31,822	1,750
Total Age 6 and Over	238,829	3,479

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*Based on the age-specific prevalence rates found by AFB and the population projections prepared by the Bureau of the Census (Current Population Reports, Series P-25, No. 704 (1977).

Sex

As seen in Table 2-2, the prevalence of reading limitations is significantly greater among women than men: 59% of the persons identified with limitations in reading regular print are women. This finding is explained, in part, by the fact that women tend to live longer than men, and, as we saw above, vision and other impairments are often concomitants of the aging process. The prevalence rate for men is 11 per 1,000 compared to 16 per 1,000 for women.

The "sex ratio"--or ratio of women to men--with reading limitations is 1.45 overall and varies within particular age groups. Women with print limitations outnumber men in the older ages (age groups beginning with 45 years) and result in sex ratios of 1.58 in the ages 45-64, and 1.91 in the group 65 years and over. The numbers of men and women with reading limitations are comparable in the ages of 17-44 years and result in a sex ratio 1.0. In the school ages 6-16 years, the number of boys with print limitations exceeds that of girls, perhaps as a result of more accidents: the sex ratio in this age group is 0.58.

Another way to examine the differences of prevalence by age and sex is through combined age-sex specific prevalence rates. This method relates the prevalence data to the total U.S. male and female population at risk in each age group, rather than to the total identified population in each age group. The age-sex specific prevalence rates show important differences in the frequency of disabilities more accurately than do the "sex ratios." The age-specific prevalence rates for men and women are three times as high for persons above 65 years compared to those age 45-64 years old. (See Figure 2-2.)

Table 2-2

Prevalence of Men and Women with Limitations in Reading Regular Print by Age

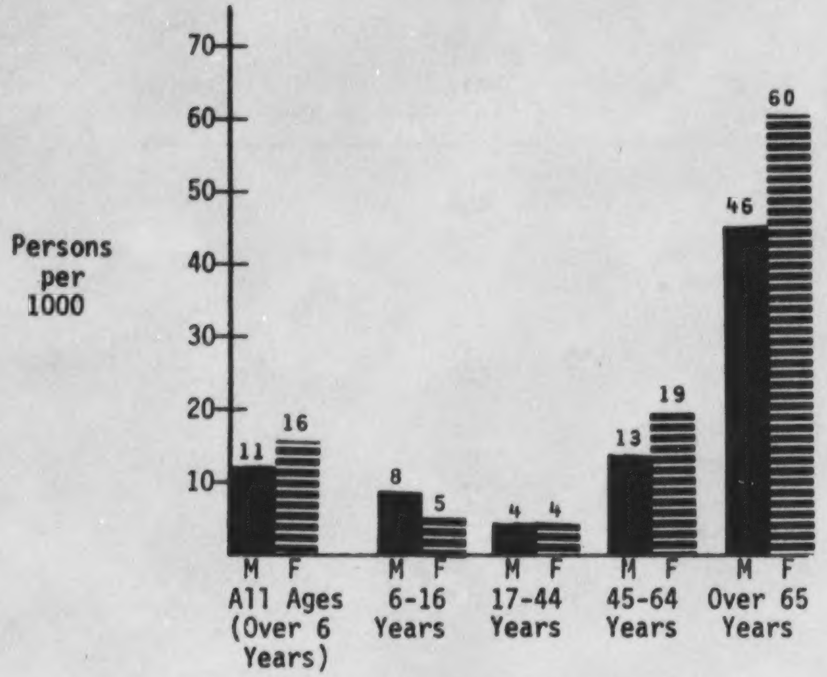
U.S.A. - 1977

Age Group (years)	Male	Female
	--------- 1000's	--------
6 to 16	168	98
17 to 44	194	190
45 to 64	275	434
65 and over	440	841
All ages (6 and over)	1077	1563
Weighted Sample Size	(3089)	(4497)

Figure 2-2

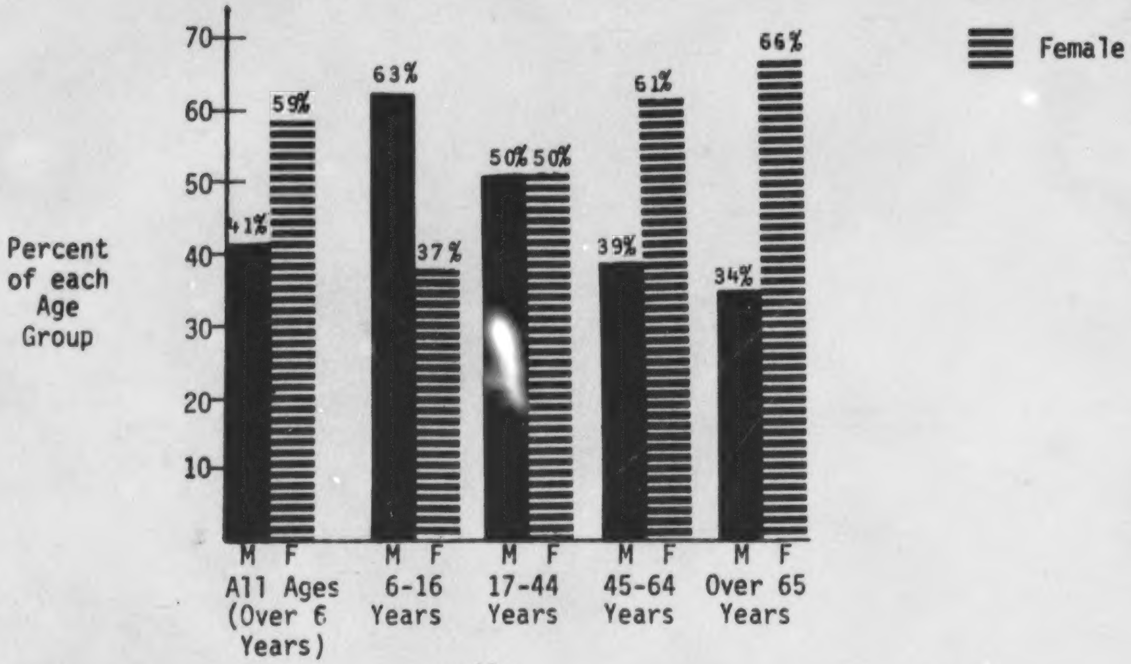
a. Prevalence Rates of Men and Women with Limitations in Using Regular Print Materials by Age

U.S.A. - 1977



b. Proportion of Men and Women with Limitations in Using Regular Print Materials by Age

U.S.A. - 1977



The sex differences in the reporting practices of reading limitations are not entirely accounted for by women being in the upper ends of the 45-64 and the 65 years and over age groups. This suggests that women are more aware of physical problems in reading, and report them closer to the onset of the disability than men. As we shall show in the next chapter, women consistently report more physical and visual limitations of a relatively lower severity than do men. The strength of a biological basis for explaining the marked differences is not very well-known, since the only serious (i.e., potentially fatal) chronic condition for which it has been established that females (especially Black females) have higher morbidity rates than males is diabetes mellitus.*

These findings are consistent with results of other investigators and could be construed as supporting one or more of the following four explanations:

1. Women's social roles require them to perform more "close work" (e.g., sewing) than do men's roles. Consequently, women may become aware of their limitations earlier.
2. In our society, men tend to perceive health problems as a kind of weakness, and hence, as less appropriate to the traditional "male role" than to the "female role." Men, therefore, are less likely to admit a limitation, while women more readily adopt the "sick role" due to their early

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*In its later stages, diabetes may result in diabetic retinopathy causing vision loss. Diabetes is now the second leading cause of new vision loss in the United States.

sex role socialization, and for some, the lack of working obligations outside the home (Verbrugge, 1976; Nathanson, 1977);

3. Men seek out and obtain compensatory reading aids (e.g., stronger eye glasses) because of their work needs and do not report problems in reading as a result;
4. Reported differences reflect real differences in disability.

Our screening data and that from the call-back interviews are insufficient to confirm any of these hypotheses. The latest insights into this controversy are provided by Gove and Hughes (1979) in their study of the determinants of rates of reported illness, which reflect some of the same sex differences as our findings on the reporting of reading limitations. Their findings suggest that when one controls for living arrangements, marital status, psychiatric symptoms and nurturant role obligations, the health differences between men and women disappear.

Implications for the NLS--Libraries must provide appropriate reading materials and equipment to readers of all ages, and set priorities for service. These findings on the predisposing factors of age and sex point to some considerations that ought to be taken into account in the preparation of alternate reading materials and equipment, and hence, should be instructive to the designers of these materials. Specifically, the design specifications for coordination, dexterity and strength need to be tailored to fit the abilities of a population with increasing numbers of elderly persons, many of whom have general health problems in addition to their seeing, dexterity, strength and/or hearing limitations. Human factor studies that will result in the preparation of prototypes consistent with the physical capacity of potential readers may be helpful here.

In terms of reading interests, the NLS and other providers of alternatives to regular print may wish to conduct surveys to determine the precise interests of potential and current subscribers. As older women form a large portion of the potentially eligible subscribers, their interests might be considered especially.

One final implication of these findings is the following: national and regional libraries that plan facility capacity on the basis of present levels of usership are likely to fall short of space, staff and equipment in the next decade, as the elderly population becomes a larger and more vocal force in American life.

ENABLING FACTORS

The biological and cultural components of race as a factor in health conditions are not precise. We present the prevalence data by race here under the heading of an enabling factor primarily because the biological basis of race as a predisposing factor has not been firmly established for most conditions.

Race*

The prevalence rates of reading limitations for non-whites is higher than that for whites in every age group, as seen below. Overall, the national prevalence rate for non-whites of 18 per 1,000 is nearly 1.5 times that for whites, but greater variation is found after age 45.

Prevalence Rates

	White	Non-White
Age Group	(persons per 1000)	
6-16 years	5.9	6.7
17-44 years	4.7	6.9
45-64 years	14.4	29.0
65 and Over	51.0	92.0
All ages (6 years and over)	13.4	18.0

These differences hold when the data are controlled by sex and suggest a genuine racial variation. Similar differentials by race to those above have been observed by NCHS (1977) for "newsprint disability" and by Kahn and Moorhead (1973) for legal blindness.

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*These data are results of the call-back study.

Possible explanations of these race differences include: higher rates of diagnosed diabetes (the U.S. non-white female rate at age 45 and over is double that for any other race-sex group); the proportion of non-white females with elevated systolic blood pressure is highest among non-white females; and hypertension is thought to raise the risk of retinopathy among diabetics.

Implications for the NLS--There is no doubt that non-whites experience relatively more physical limitations in reading than do whites. Further, the non-white population includes a larger proportion of poor and less well-educated persons than the white population. As we shall see, in Chapter 6, education and, to a somewhat lesser extent, income are both important determinants of reading activity and awareness levels. Hence, it follows that the reading habits of non-whites are likely to differ from those of whites, as may their awareness levels of print alternatives.

One implication of this finding for the NLS is that outreach activities geared to whites are unlikely to succeed in identifying and arousing an interest in print alternatives among non-whites.

COMMUNITY AND ORGANIZATIONAL FACTORS

The screening study provided data on which to assess a number of community and organizational factors in relation to the distribution of persons with reading limitations.

Regional Distributions

Significant regional differences in the prevalence of print limitations exist across the United States. In part, these differences in frequency reflect the geographical concentration of the population and its age distribution. When the data are adjusted for age, the observed differences in prevalence rates more accurately reflect regional variations in culture, ethnicity, and life style, including utilization of health care.

Adopting the U.S. Census Bureau's standard division of the country into the North East, South, North Central and West regions, about 64% of the U.S. population having limitations in reading regular print reside in the southern and north central states.* (See Figure 2-3 and Table 2-3). The South and North Central regions also have the highest prevalence rates (13 per 1000 persons) and the North East region has the lowest prevalence rate (10 per 1000 persons).

When these four regions are further subdivided into the standard nine geographic Census areas (see Figure 2-4), the area with the largest potential need for alternative reading media is the East North Central region; this midwest industrial region has over a half million individuals with print limitations, and shares the highest prevalence rate of 13 persons per 1000. The South Atlantic region also has approximately one half million persons with print handicaps (prevalence rate of 12 persons per 1000). The Mountain region has the lowest prevalence, with slightly fewer than 110,000 people with print limitations, but a similar prevalence rate of 12 per 1,000 persons.

There are not marked geographical differences in the rates at which

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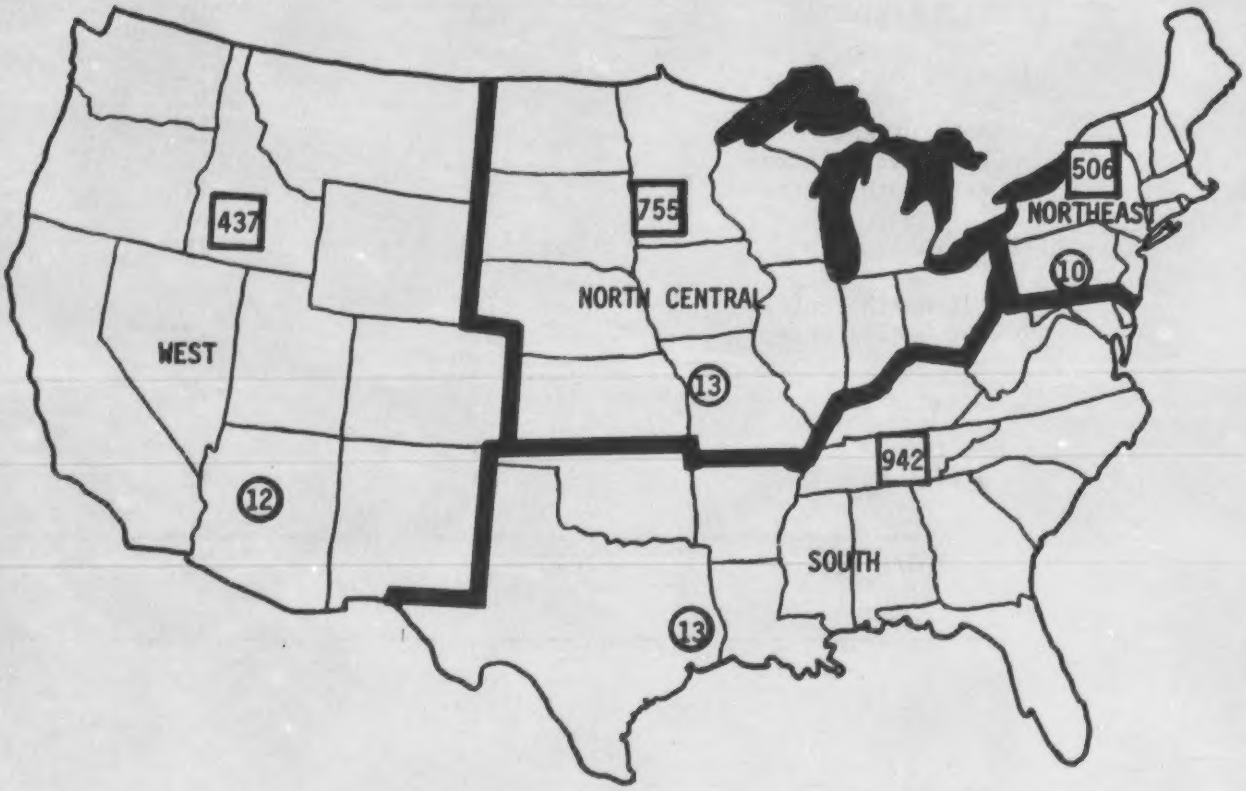
*Figure A2-1 shows that the four NLS geographical regions are comparable to the four U.S. Census Bureau regions.

Figure 2-3

Regional* Distributions of Persons With Limitations in Reading Regular Print

U.S.A. - 1977

Squared (☐) numbers indicate Prevalence (number of persons in 1000s).
Circled (○) numbers indicate Prevalence Rate (persons per 1000).


FOUR CENSUS REGIONS
437
755
506
NORTHEAST
10
NORTH CENTRAL
WEST
13
942
12
SOUTH
13

*See Figure A2-1 for comparison between Census Regions and NLS/BPH Regions.

Table 2-3

Regional Distribution of Persons Over Six Years Old With Limitations in Reading Regular Print

U.S.A. - 1977

Census Region	Prevalence (Number of Persons in 1000s)		Prevalence Rate (Persons per 1000)
North East	506		10
New England		156	10
Middle Atlantic		350	10
South	942		13
South Atlantic		546	12
East South Central		193	13
West South Central		203	11
North Central	755		13
East North Central		572	13
West North Central		183	12
West	437		12
Mountain		109	12
Pacific		328	12
TOTAL U.S. =	2640		12

n = 7585

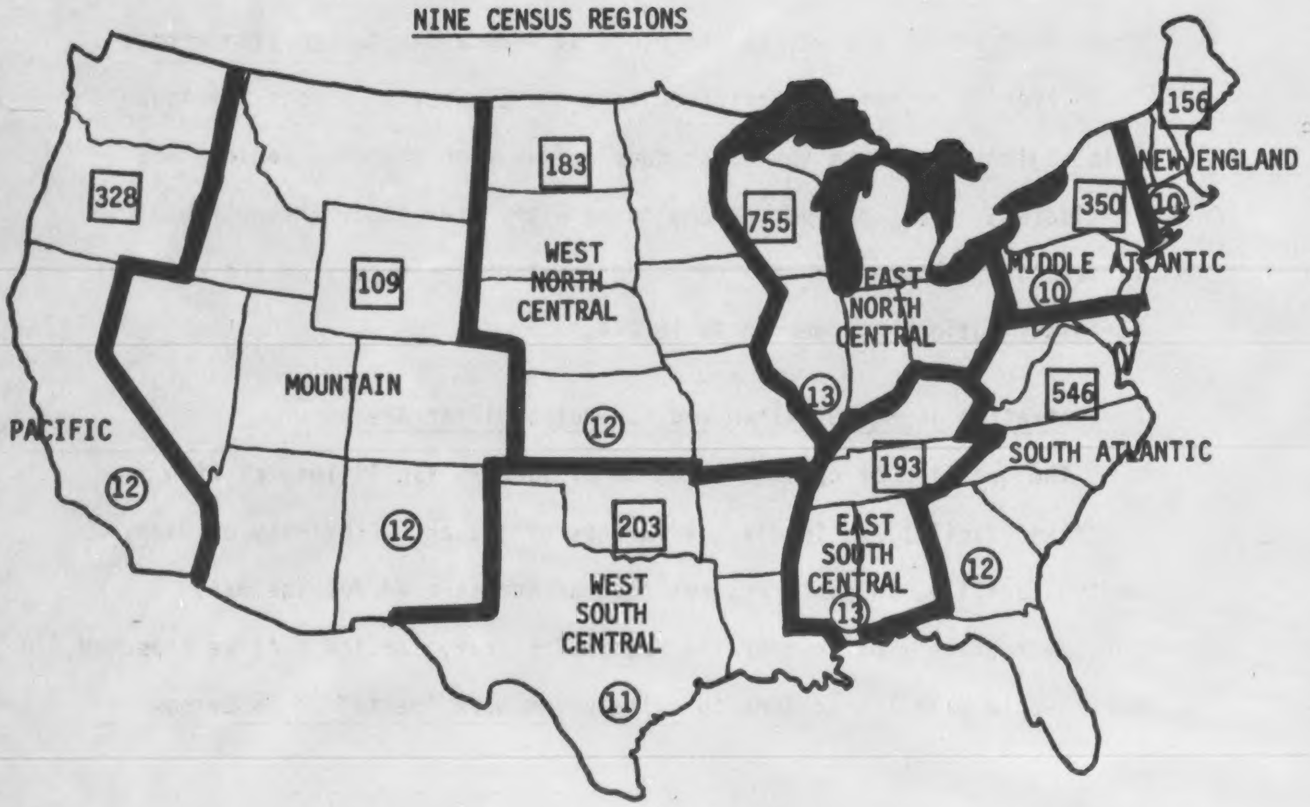
Figure 2-4

Regional Distributions of Persons With Limitations in Reading Regular Print

U.S.A. - 1977

Squared (□) numbers indicate Prevalence (number of persons in 1000s).

Circled (○) numbers indicate Prevalence Rate (persons per 1000).


NINE CENSUS REGIONS
PACIFIC
328
12
MOUNTAIN
109
12
12
WEST NORTH CENTRAL
183
12
WEST SOUTH CENTRAL
203
11
EAST NORTH CENTRAL
755
13
EAST SOUTH CENTRAL
193
13
SOUTH ATLANTIC
546
12
MIDDLE ATLANTIC
350
10
NEW ENGLAND
156
10

males and females report limitations. This is shown in Table 2-4. The range of variation of percent for males with problems across the four regions (39% to 42%) may be largely attributed to regional age differences. When one looks at the nine smaller regions, the sex-specific data become less reliable, and more variation (nine percent) is observed. For example, in the Mountain region, six percent more males reported limitations than for the U.S. as a whole.

In the South, slightly more households reported at least two persons with print limitations (9%) than in other regions. The percent of households reporting at least two persons with print limitations in the other regions were: North Central (8%); West (7%); and North East (5%). These differences are within the range of chance due to sampling error.

There is no notable variation in age distribution across the four main regions, but some variation does appear when the nine regions are considered: this, however, seems to be within the study's sampling variability. There are only minor regional differences from the national age distributions as seen in Table 2-4.

Concentration in Metropolitan and Non-Metropolitan Areas

The question of optimum location of library facilities, as with any fixed facilities, involves a variety of issues. Proximity of users to the facility, in part, ensures ease of access even for the mail service routinely offered by the National Library Service. As we expected, more people with limitations in using print were identified in metro-

Table 2-4

Regional Age and Sex Distributions of Persons With Limitations in Reading Regular Print

U.S.A. - 1977

Census Region	Percent Age Distribution				Percent Sex Distribution	
	6-16 Years	17-44 Years	44-64 Years	65 Years & Over	Male	Female
North East	12	16	25	48	39	61
New England	15	18	24	44	42	48
Middle Atlantic	11	15	25	49	39	61
South	10	15	28	47	40	60
South Atlantic	9	15	28	48	38	62
East South Central	7	16	26	51	42	58
West South Central	15	17	27	41	43	57
North Central	12	16	25	47	42	58
East North Central	12	16	25	47	42	58
West North Central	11	13	27	50	41	59
West	10	17	25	48	42	58
Mountain	12	15	27	46	47	53
Pacific	10	17	25	48	41	59
TOTAL U.S. =	11	16	26	47	41	59

n = 7585

politan areas than in non-metropolitan, reflecting the concentration of the U.S. population in the former areas. About 69% of all persons reporting reading limitations reside in metropolitan areas (SMSAs)* compared to 72% of the population at large. However, the regional prevalence rates point out consistent marked differences between metropolitan and non-metropolitan areas. Other than in the Northeast, where about 73% of the population live in SMSAs with populations of 250,000 and over, the prevalence rates of persons with print limitations are 10%-20% higher in non-metropolitan areas than in metropolitan areas. (See Table 2-5.) The data in Table 2-6 show that "relative prevalence rates" tend to increase as the community population size gets smaller. Prevalence rates are lowest in SMSAs of between 250,000 - 1,000,000 persons.

Age-specific prevalence rates tend to be 10%-20% higher in non-metropolitan areas than in metropolitan areas. Sex-specific prevalence rates are about 20% higher for men in non-metropolitan areas than in metropolitan areas, and nearly 30% higher for women. There do not appear to be marked sex-specific differences in life span for metropolitan and non-metropolitan areas, so this possible basis for these findings must be dismissed.**

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*Standard Metropolitan Statistical Areas (SMSAs) are counties including at least: (a) one city with 50,000 or more inhabitants, or (b) a city having a population of at least 25,000, which together with the addition of contiguous places (incorporated or unincorporated) having a population density of at least 1,000 persons per square mile, and which together constitute, for general economic and social purposes, a single community with a combined population of at least 50,000, provided that the county or counties in which the city and contiguous places are located have a total population of at least 75,000. (In New England, the cities and towns qualifying for inclusion in an SMSA must have a total population of at least 75,000.)

**Lebowitz (1975) shows that the average life expectancy of urban residents was about two years less than that of residents of non-urban areas.

Table 2-5

Prevalence Rates of Persons With Limitations in Reading Regular Print by Census Region

U.S.A. - 1977

Census Region	Prevalence Rate (Persons per 1000 Households)		
	Metropolitan	Non-Metropolitan	Total
North East	2.9	2.9	2.9
New England	2.6	3.0	2.8
Middle Atlantic	2.9	2.8	2.9
South	3.6	4.4	3.9
South Atlantic	4.0	4.5	3.4
East South Central	3.4	4.6	3.9
West South Central	3.2	3.7	3.3
North Central	3.4	4.1	3.7
East North Central	3.5	4.1	3.7
West North Central	3.2	4.2	3.6
West	3.2	3.5	3.3
Mountain	3.2	3.4	3.3
Pacific	3.2	3.6	3.3
TOTAL U.S. =	3.3	4.0	3.5

n = 7585

Table 2-6

Distribution of Persons With Limitations in Reading Regular Print by Size of Sampling Location

U.S.A. - 1977

Sampling Location	Approximate # of Households Interviewed in Sampling Frame in 1000's	Prevalence of Persons with Reading Limitations in 1000's	"Relative Prevlence Rates"*
SMSAs over 1 million persons	88	1020	.95
SMSAs of 250,000-1,000,000	52	575	.92
SMSAs of 50,000-250,000	15	210	1.14
Non-metropolitan Areas and Counties under 50,000	60	835	1.19
TOTAL=	214	2640	

*By "relative prevalence rates," we mean the ratio of the percent of persons reporting limitations to the percent of households in the sample. It was not possible to calculate the exact prevalence rates excluding the group under age six, since the age distribution of persons by sampling location is not known.

The average household size in non-metropolitan areas is slightly higher than in metropolitan areas. In 1977, outside SMSAs the rate was 2.92 persons. Inside metropolitan areas of one million population or more, there were 2.82 persons per household and inside metropolitan areas under one million population the rate was 2.84 persons per household. Household sizes outside central cities are about five percent higher than in central cities.

In summary, we found, as did NCHS (1977), that differences in metropolitan and non-metropolitan prevalence rates are still present after controlling for age and sex. Hence, the implication is that a clear explanation of reading limitations cannot be attributed to current demographic situation. McCoy and Brown (1978) suggest that rural-urban differences in the health status of low income elderly persons must largely be explained by accumulated effects of years of residence in differing social, economic and physical environments. They discount a hypothesis that the relative concentration of health and rehabilitation services in metropolitan areas makes it easier to seek professional health care, by showing no significant differences in the utilization of health services by residential location. In Chapter 5, we report similar findings showing the same frequency of medical check-ups or treatments and visits by rehabilitation teachers among respondents living in metropolitan and non-metropolitan areas. We would expect that residents of areas who report higher prevalence rates would also have higher utilization rates for health services, so these results may suggest a medically underserved population in non-metropolitan areas. This would be consistent with recent studies showing rural dwellers to have less access to health care both financially and in terms of transportation. On the other hand, rural residents may depend more on folk medicine or other non-professional or non-prescription services, or more upon family helping arrangements. A number of other explanations are possible, and all have implications for the National Library Service that will be discussed in subsequent sections.

DISABILITY FACTORS

The screenings, which consisted of open-ended questions and probes, such as "What is your reading problem?" produced relatively little information on the specific types of physical limitations affecting reading. More complete information obtained from respondents who were reinterviewed in the call-back interviews is presented in the next chapter. The data provided in this section are intended to serve more as a record of what we did than as a guide for the National Library Service in planning for reader needs.

Types of Primary Limitations

Reading problems reported by the respondents in the screenings were classified into three braod categories on the basis of the functional limitations or disabilities they presented for the respondents:

1. Seeing--inability or severe difficulty in seeing well enough to read regular print.
2. Manual dexterity, Motor, and/or Weakness--inability or severe difficulty in holding reading materials, turning pages, sitting up or reading for longer than a few minutes without fatigue.
3. Learning--limitations in perceptual, cognitive or intellectual functioning that restrict the use of printed materials.*

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*The intention of this study was not to identify those many hundreds of thousands of Americans who suffer from learning disorders in reading regular print, such as minor dislexia, for whom compensatory education is the appropriate treatment rather than special optical or electromechanical aids or alternate reading media.

As more than one disability might result from a given physical cause (e.g., a stroke might result in both a loss of memory and a loss of coordination), the reported medical problems were coded, where possible, into primary and secondary disabilities.

Table 2-7 shows that some 80% of the respondents reporting problems in using print materials in the screenings specified a primary functional limitation of a single type. Difficulty or inability seeing was the most common primary restriction: 65% reported this single impairment, eight percent reported that their primary impairment was a learning problem, seven percent reported a dexterity, motor and/or weakness problem, and 17% gave an indeterminate response--i.e., a response for which the functional effect(s) of the limitation could not be directly determined.

In four percent of the cases more than one limitation was reported without a clear specification of which problem was the most serious. In these cases, difficulties in seeing and in dexterity, motor and/or weakness were present in over three out of every four instances. Details of the age and sex distributions by primary limitation type are given in Figure 2-5.

Only minor variations in the relative proportions of different functional limitations are observed regionally as well. The South reports learning limitations slightly less often, but by and large, the distribution of functional limitations is similar across regions.

Table 2-7

Estimated Number of Persons Six Years or Older With Limitations in Reading or Using Regular Print*

U.S.A. - 1977

Primary Functional Limitation	Prevalence (Number of Persons in 1000's)	Percent of Total
Seeing	1710	65
Learning	200	8
Dexterity, Motor and/or Weakness	175	7
Multiple Limitations** (no one specified as primary)	105	4
Undetermined affects***	450	17

n = 7585

*Based on the projection of 7585 persons identified in completed calls to 217,000 households having listed telephone numbers. The term "reading" includes seeing and manipulating or using regular print materials.

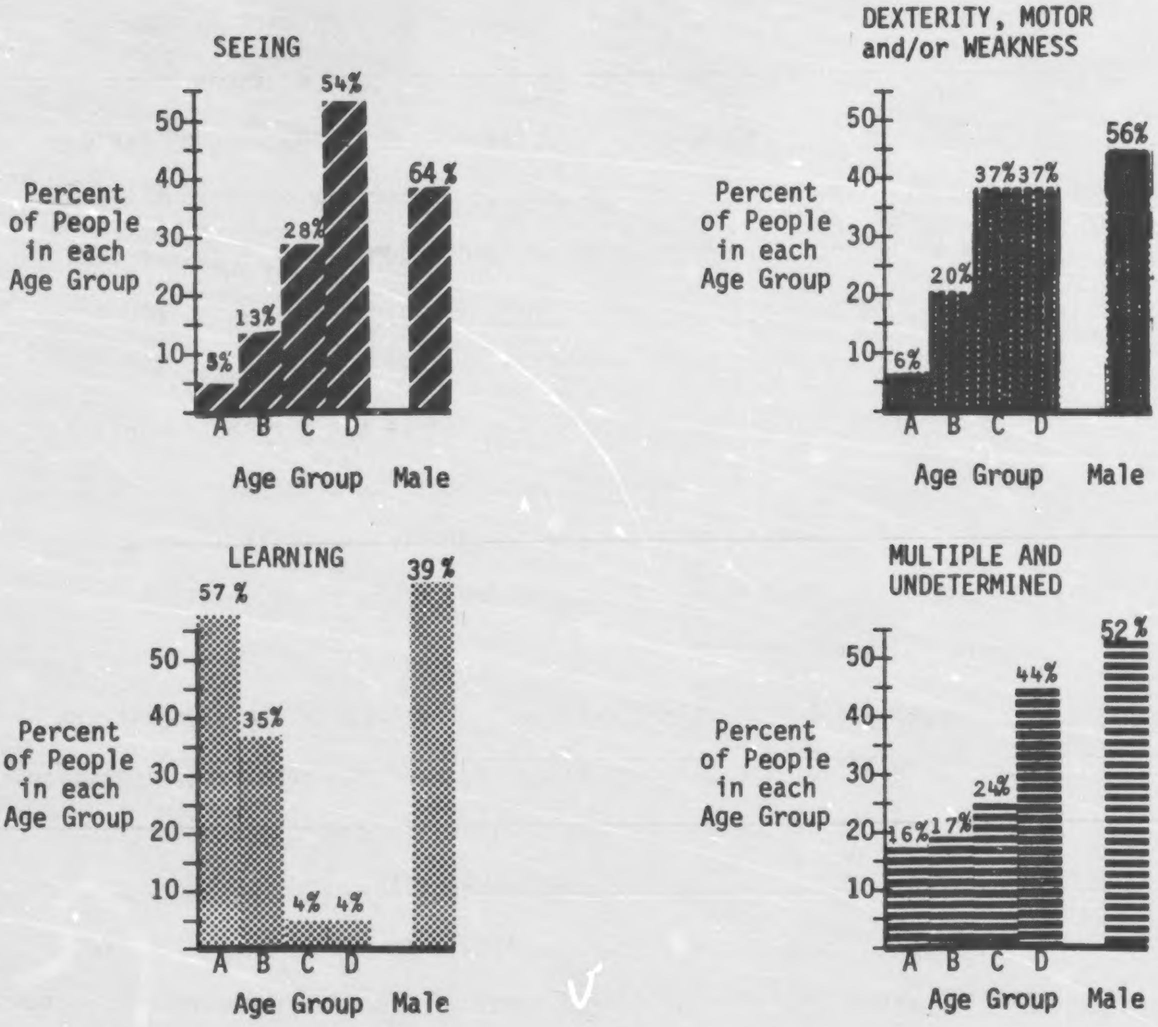
**Includes: Seeing plus Holding, Turning or Weakness - 65,000; Seeing plus Learning - 25,000; Dexterity, Motor and/or Weakness plus Learning - 15,000; Seeing plus Dexterity, Motor and/or Weakness plus Learning - 2,000.

***Cases in which a functional limitation could not be directly determined, e.g., brain damage, aging, heart disease, refused to discuss.

Figure 2-5

Age and Sex Distributions of Persons with Limitations in Reading Regular Print by Primary Limitation Type

U.S.A. - 1977



Key: Age Group

A = 6-16 years
B = 17-44 years
C = 45-64 years
D = 65 years and over

Permanency of the Limitation

The duration of functional limitations is an important consideration in the use of alternative reading materials to regular print. Persons with temporary disabilities, although eligible for the National Library Service, are less likely to be aware of this program and, if aware of it, are less likely to feel themselves sufficiently disabled to invest time in applying and waiting for recorded or large print materials. Braille requires special training over an extended period, and consequently, would rarely be useful. Temporary conditions may also be acute ones, in which psychological trauma as well as a broad disabling problem may be present. There is also the expectation or hope of getting better, and not requiring special materials.

As seen in Table 2-8, on the whole, 87% of the persons reporting reading limitations indicated that these were "permanent." Reported permanency was highest among the persons indicating dexterity, motor and/or weakness limitations (93%), and lowest among persons with learning difficulties (77%).

Non-permanent limitations were most prevalent in the youngest age group. Some 31% of the 6-16 age group reported non-permanent limitations; 10%, 13% and 11% of the non-permanent limitations were found in the age groups 17-44, 45-64, and 65 and over, respectively.

Males and females seemed equally likely to report permanent limitations. Variations by region and degree of urbanization were also slight.

Table 2-8

Distribution of Persons by Permanency of Reading Limitations: Percent Reporting Limitation is Permanent by Type of Limitation and Respondent

U.S.A. - 1977

	PERCENT OF PERMANENT LIMITATIONS		
Primary Limitation	Reported by All	Reported by Respondent	Reported by Family Member
Seeing	86	85	87
Dexterity, Motor and/or Weakness	93	94	92
Learning	77	79	77
Multiple and Undetermined	90	92	86
ALL =	87	87	87

n = 6702, with 3539 family members as proxy respondents and 3163 disabled persons.

Ability to Utilize a Telephone

A major concern in planning the overall study was the extent to which persons with impairments in using print materials would be able to talk directly on the telephone in a follow-up interview.

In any household survey where information is provided by one member for other family members (proxy reporting), the awareness and attitude of a participant-observer are brought into play. Proxy reporting is a critical issue for this and most other health surveys. Assuming the observer has full knowledge, he/she may report the disability of a close household member more objectively and accurately. On the other hand, one observation in this study was that family members were occasionally more hostile to being interviewed than the disabled household member him/herself. The social threat perceived in reporting or discussing health conditions has been shown in past studies to result in under-reporting, and may be serious among our target population.

The call-back interview contained a number of questions on reading, personal interests, and attitudes in addition to objective items. For the more objective questions, such as the permanency of the reading limitations, the answers made by the proxy respondents were consistent with those made by the persons having the limitations. For some of the more subjective questions, however, less consistency might be expected, and, therefore, it was preferable that the respondent respond for him or herself.

In the screening interviews, information about household members identified as having limitations in reading print was provided by proxy respondents in 53% of the interviews. Information was provided by a proxy family member in 95% of the cases when learning was the primary problem. When seeing was the primary limitation, proxies reported about 45% of the time, and when the primary limitation was one of dexterity or strength, proxy respondents reported about 60% of the time.

At either end of the age spectrum of persons with reading limitations, the proportion of proxy respondents was seen to increase; the proportion of proxies answering the telephone (mostly women) rises to over 90% in households where a disabled person is either very young or very old. In the age range 35-70, the proportion of proxy respondents is between 35%-45%. Little variation in this pattern across regions or in metropolitan and non-metropolitan areas is observed.

Overall, about one quarter (23%) of all persons with limitations in reading print were reported to be unable to be interviewed on a telephone (to utilize a telephone) by some other member of the family. In 44% of the cases where the person with a limitation was under 17 years old, proxy respondents (mostly mothers) indicated that the desired respondent would be unable to talk directly at a later date; eliminating this group, 21% of the persons 17 years or older whom we identified as print handicapped were unable to be interviewed on a telephone for one reason or another.*

About one out of three persons with dexterity, motor and/or weakness limitations were reported to be unable to be interviewed over the telephone, compared to one out of seven persons with limitations in seeing. It was reported that about twice as many males as females were unable to be interviewed over the telephone. This large difference tends to support one of two hypotheses: (1) women (who answered the telephone most frequently in our study) feel that questions about the health of household members is most properly within their domain, or (2) when men take on the "sick role," their condition is on the average of greater severity than women's.**

LIMITATIONS OF THE FINDINGS ON PREVALENCE

Reliability and Validity of the Estimates

The extent to which a survey measures what it is intended to measure is known as the validity of its findings, and the extent to which it gives the same results on repeated measures with the same population is known as its reliability. Neither perfect reliability nor perfect validity can ever be expected in a survey, regardless of what survey it is, because every survey must deal with estimating and accounting for error from various sources.

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*What is unclear here is the proportion of cases in which the desired respondents were physically unable to operate a telephone independently on account of limitations in dexterity, weakness, hearing, comprehension, verbal abilities or underage, as compared to instances where the family did not wish the desired individual to answer questions. For example, family members may have felt that the print handicapped individual was too young to provide the kind of information being requested, although the precise wording of the question--"If we were to call back at a later date to discuss free library facilities, would it be possible to talk directly with (name of person with limitation using print materials)?"--does not make age a basis for exclusion.

**See Verbrugge (1978) and Segal (1976).

In a sample, each statistic has its own reliability and validity depending on the sample design, response rate, and upon the precise wording and manner in which the study questions are asked.

Reliability--The precautions taken to maximize sample reliability, given budget and time constraints, are discussed in detail in the methodology section. Procedures to adjust the results for sampling variability are provided there. The prevalence findings presented here, derived from three independent samples of approximately 70,000 households each, resulted in estimates that varied by only one to three percent for many factors, such as primary condition, age, sex and region. These findings are most reassuring, and lend confidence to our belief in the usefulness of the data.

Validity--Constant bias introduced through inappropriate phrasing of the questions or unrepresentative sampling could distort the estimates to an indeterminate extent, reducing the validity without necessarily affecting their reliability. Consequently, much care has been taken to avoid such sources of error.

Persons with disabilities in reading or using regular print are widely dispersed throughout the population, and often do not have readily observable physical impairments. Further, as Josephson (1968) points out in regard to visually impaired persons, many persons in this population are reluctant to be identified, and thereby categorized or labelled as such. Many family members of such persons share this reluctance. Consequently, care must be taken in making estimates about the size of this population and its characteristics; definitive statements generally are not warranted. The data presented here are based on what individuals report about themselves or others in their households, rather than on medical measurements made in accord with operationally-defined criteria, or test scores derived from standardized functional tests. Although the data relate to how well household members are able to perform familiar specific tasks, such as seeing print, holding books and turning pages in their daily lives, such behavior is still prone to biases of self-perception.* Some people will exaggerate difficulties, while others will stoically underestimate or dismiss them. For some, dyslexia may make reading impossible, while for others, reversing letters may be one symptom of a learning disability that is not comfortably discussed. Still others have not learned to read, and consequently, will not perceive a functional inability to do so when questioned.

A limitation of the findings already alluded to, is the use of proxy respondents. Health interview surveys, indeed most household surveys, typically do not distinguish between responses given by the individual who has some attributes of interest, and those of an adult household member responding as a proxy for that individual. This failure to distinguish the two responses may be based on the unjustified assumption that proxy respondents invariably report conditions with the same accuracy and completeness as do the desired respondents themselves. This issue is discussed in Volume 5.

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*Some investigators have explored attitudes of the family on "sick role": see, for example, Seeback and Saver (1977),and Campbell (1978).

Another factor that bears on the validity of the findings is the relation of the way the questions are phrased to the particular information sought. This study is not an inventory of all functional impairments that *might* affect reading, but rather is a presentation of data on limitations in reading print as reported through open-ended questions. Other wordings might have achieved different results (see Berkowitz and Suhr, 1979).

One last consideration affecting the study's validity is the fact that reading is not only a physical activity, but also a cultural activity, greatly dependent on education and family life style. Seeing, by contrast, is much more "culture free," as is reaching or grasping small objects. But holding or turning the pages of a book or magazine in the act of reading is already a social act, governed or determined by the prevailing social practices. Consequently, people who have reading limitations but are not interested in reading may not report such limitations because the activity of reading is not an integral part of their life, or within their frame of reference.

In practice, the above issues of survey validity are often overlooked, but are critically important when administrators employ statistics about the size of their client populations as a basis for obtaining funding to meet anticipated client needs.

CONSISTENCY OF AFB PREVALENCE FINDINGS WITH OTHER STUDIES

An important question to consider in assessing this study's validity is: How consistent are the AFB findings with results of prior studies on the prevalence of persons with reading disabilities? An expanding literature on disability was examined, but no directly comparable, comprehensive empirical studies could be found to serve as a basis for validating this study's findings.

Variations in definition and in manner of measurement for each of the different types of impairments resulting in limitations in reading regular print led to several confusing sets of estimates. Nevertheless, the AFB finding of a prevalence of approximately 1.8 million persons (above the age of six years) who have difficulty reading due to disorders in seeing, compares reasonably well with the 1977 estimates of the National Center for Health Statistics Health Interview Survey (HIS) of 1.4 million persons of all ages unable to see well enough to read newsprint with corrective lenses, and the 1976 estimates of the Bureau of the Census, Survey of Income and Education (SIE) of 2.0 million persons who are either blind or have serious difficulty seeing.*

National data are available on other physical impairments** but not on how these impairments may affect reading; consequently, any comparisons are bound to be conjectural. Nonetheless, it may be suggestive to review the national data on prevalence of impairment in light of the data on the prevalence of selected chronic conditions reported to cause limitations in spheres of major life activity. Primary data prepared by Nagi (1976) from a survey conducted by Ohio State University, indicate that over 2.3 million Americans, aged 18 or over, need assistance in eating, dressing, bathing and personal care. Data from the Health Interview Survey (NCHS, 1974) estimated that over 7 million persons of all ages were not able to work, keep house, or attend school due to chronic conditions in 1974. These statistics on disability in spheres of major life activity were further supported by both the 1970 U.S. Census estimates of about six million severely disabled persons unable to work at all or to work regularly, and the Social Security Administration's Surveys of Disabled Adults aged 18 through 64 years old, conducted in 1966 and 1972 (Haber, 1968, 1969, 1970; Schechter, 1978; Allan, 1976). The SIE (1976) data indicate 8 million persons ages 18-64 with activity limitations.

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*The difference between the NCHS and AFB survey results seem plausible, given differences in sampling design (telephone calls to 214,000 households versus personal interviews in 40,000 households), wording of the questions, allowance for proxy respondents, and anticipated under- and over-reporting errors.

**See Nagi (1977) and Dudeck (1977), for example, for a review of prevalence rates of a wide range of impairments.

Finally, in considering how sources of variation between these estimates of severely disabled persons in the general population (which range from 25 per 1000 to 40 per 1000) reckon with AFB's estimated prevalence rate of disabilities in reading print of 14 per 1000 persons above six years old, it is useful to look at studies performed for the Library of Congress. Pollet (1973) and Kamisar and Pollet (1975), in reviews of 1971 HIS and other health data, estimate that the number of persons with disabilities reading regular print was likely to be in the range of 5.8 to 11.4 million. The midpoint figure of 7.6 million was taken as a conservative projection. Our study arrived at a much lower figure of about 2.6 million.

The most obvious source of variation between the Kamisar and Pollet estimates and the AFB findings is the lack of allowance by Kamisar and Pollet for the overlap among sources, i.e., the extent to which individuals experience multiple impairments. As a result, Kamisar and Pollet overestimate the number of persons with reading limitations. The AFB study, by determining the extent of multiple impairments causing reading disabilities, arrives at a more conservative estimate of the number of persons with reading disabilities. In the National Household Interview Survey (1977), the average number of additional severe impairments for persons with newspaper disability is about 0.88; 60% of the persons with newspaper disability have at least one other serious impairment and 72% of persons above age 65 years have multiple impairments. In the SIE (1976) study, which used slightly different categories for reporting severe impairments and chronic conditions than the HIS, the average number of *additional* severe impairments for persons who are either blind or have serious difficulty in seeing was 1.4.*

One other important source of variation became apparent from a careful review of the components reported in the Kamisar and Pollet data. Included in their estimates were a large number of persons with certain diseases and conditions that are rarely reported to be associated with a print reading disability, such as muscular dystrophy, cerebral palsy, mental retardation, Parkinson's Disease, and spinal cord injury. While the AFB study of reading disabilities indicates that it is nearly impossible to discount any physical condition or disease as having an effect on reading abilities for some individuals, our data show that persons infrequently report serious limitations in reading or using regular print as a result of such physical conditions.

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*The SIE (1976) data present results showing some of the combinations of problems that persons have. For persons who either have serious difficulty in seeing or are blind, these combinations in 1000's are: Mental retardation-40; Difficulty in Hearing-418; Deafness-62; Speech Impairments-64; Serious emotional problems-66; Orthopedic handicaps-176; Arthritis or Pheumatism-583; Trouble with Back or Spine-328; Any Heart Trouble-467; Chronic Nervous Disorder-221; Respiratory Disorder-222; Digestive Disorder-187; Other-20.

Two points must be emphasized here: first, the effect of specific physical conditions on reading ability cannot be presumed merely from data on the prevalence of the condition;* and second, reading is a social and cultural activity. If an individual cannot read, or views reading as relatively unimportant, his/her physical impairment may not be perceived as a reading disability.

Assessment of AFB Findings by Disability Organizations

As part of the process of assessing the validity of the AFB estimates, directors of some 40 national organizations of and for persons with disabilities were asked to review the sample design and results. A summary of the comments of the 25 organizations that participated is given in the appendix to this chapter.

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*Although based upon somewhat different definitions and time frames, examination of a few different findings may indicate the danger of drawing conclusions from impairment data about disabilities. The 1971 HIS data show that some 8 million Americans had orthopedic impairments of the back or spine (except paralysis). Of this group, approximately 2 million reported any limitations of "usual activity" as a result of the impaired function. And about 290,000 persons indicated an inability to work, keep house or engage in school activities as a result of the condition. If all of the latter group is imputed to have severe difficulties in sitting up that might affect reading, then approximately three percent of the impaired group would be affected. Similarly, of the some 2.4 million persons with orthopedic impairments (except paralysis and absence of upper extremities and shoulders), the proportion who indicate severe disability in carrying on a major activity (working, keeping house, attending school) is about three percent. This group of 84,000 might have severe disabilities in holding a book or turning pages. Of course, the extent of the disability is unclear.

Most of the organizations relied upon data from statistical studies prepared by federal health agencies for information about the size of their target populations and were not very familiar with definitional issues.

On the whole, though, the organizations reported that the prevalence estimates by AFB seemed relatively accurate. Two major complaints about the design of the screening study were that the telephone survey excluded some deaf and deaf-blind persons living alone, and that the screening questions did not specifically ask about the reading problems of persons with learning difficulties. These issues are taken up in the methodology section (Volume 5).

SUMMARY

Approximately 2.64 million persons, six years or older, in the U.S. household population in 1977 had serious difficulties in reading or using regular print. The prevalence rate for persons six years or older having limitations in reading regular print was estimated at 14 per 1000. Nearly half of the identified population are above the age of 65, and approximately 60% were women. No major regional differences in these basic characteristics were found, though the prevalence rates in non-metropolitan areas were higher.

The prevalence data and other statistics showing that the general population above 65 years of age is growing at approximately two percent a year, suggest a mandate for administrators and policy planners to develop programs for special reading materials and facilities providing alternatives to regular print, with a special awareness of the needs of the elderly.

APPENDIX 2-1

Survey of Disability Groups and Results

Table A2-1

Subject to Revision 5/78
Not for Citation

PROJECTION OF NUMBER OF PERSONS REPORTING INABILITY OR DIFFICULTY IN USING REGULAR PRINT MATERIALS - U.S.A. - 1977***

Nature of Problem Reported	Persons		% Reporting Permanent Problem	Age Distribution - %				Sex	
	1000's	% of Total		6-16 years	17-44 years	45-64 years	65 or older	% Male	% Female
Seeing	1500	62%	86%	5%	13%	29%	54%	36%	64%
Holding, Turning, Weakness	125	5	93	6	23	37	35	43	57
Learning	160	7	77	58	36	4	2	62	38
Undetermined (persons who did not specify the affects of their problems-like aging, stroke, heart condition, diabetes, refusals)	345	14	90	15	17	24	44	49	51
Seeing plus Holding, Turning, Weakness	40	2	97	1	8	34	57	39	61
Seeing plus Learning	20	1	81	49	30	9	12	51	49
Seeing plus Undetermined	125	5	92	5	12	24	59	36	64
Holding, Turning, Weakness plus Learning	10	*	91	44	28	20	8	64	36
Holding, Turning, Weakness plus Undetermined	40	2	94	9	12	36	44	44	56
Learning plus Undetermined	30	1	74	49	33	8	10	57	43
Seeing plus Holding, Turning, Weakness plus Learning	1	*	**	**	**	**	**	**	**
Seeing plus Holding, Turning, Weakness plus Undetermined	20	1	100	7	11	25	58	40	60
Seeing plus Learning plus Undetermined	5	*	**	**	**	**	**	**	**
Holding, Turning, Weakness plus Learning plus Undetermined	5	*	**	**	**	**	**	**	**
Seeing plus Holding, Turning, Weakness plus Learning plus Undetermined	1	*	**	**	**	**	**	**	**
TOTAL	2425	100%	87%	11%	16%	26%	47%	41%	59%

*less than 1 percent

**data insufficient to make reliable estimates

***based on calls to listed telephone numbers

Table A2-2 PROJECTED NUMBERS OF PERSONS WITH SELECTED CONDITONS RESULTING IN PRINT HANDICAPS - U.S.A. - 1977* Subject to Revision 5/78
Not for Citation

Selected Conditon	Total Persons (1000's)	Percent of Total by Nature of Problem (Percent by Type of Print Handicap)										
		Seeing	Holding, Turning, Weakness	Learning	Undetermined	Seeing + Holding, Turning, Weakness	Seeing + Learning	Seeing + Undetermined	Holding, Turning, Weakness + Learning	Holding, Turning, Weakness + Undetermined	Learning + Undetermined	Multiples of Three or More
Headache	12	20%			14			54		6		6
In the Hospital	8	25	13		13	4		33		4		8
Medication	10	50	3		3	17		17		7		3
Operation	73	67	9		7	2	3	6	1	4		2
Allergy	4	27			36	9		27				
Aging	146	33	1		46	1		14		3	1	1
Congenital	63	48	6	4	21	1	1	8	1	2	5	3
Brain Tumor	5	27	20	7	27			7		13		
Leukemia	1				67			33				
Unpecified Cancer	7	5			60			20		10		5
Stroke	102	14	15		37	7	1	12		9	1	3
Brain Hemorrhage	3				67			11		11	11	
Unspecified Brain Damage	35	6	2	3	43	2	1	8	2	11	18	5
Unspecified Hemorrhage	7	24			38			24		10		5
Heart Condition	65	20	2		31	1	1	26	1	9	3	9
Arteriosclerosis	25	24	1		44	1		23		6		1
Addison's Disease	3	22	11		44			11				11
Multiple Sclerosis	18	9			74	2		6		8		2
Cerebral Palsy	26	3	8		69	1		3	1	10	1	4
Parkinson's Disease	12		6		75			6	3	11		
Muscular Dystrophy	5		7		80			7			7	
Polio	4		27		36				9	27		
Epilepsy	17	6	8		37	2	2	20	1	2	16	6
Nerves	25	11	14		31	4	1	11		17	4	7
Unspec. Muscular/Motor	8		30		35	4		4	13	9		4
Diabetes	116	57		1	33	1		24		2		2
Respitory Ailments	9	16			24	8		16		28		8
Childhood Illnesses	7	55	10	5				15		10		5
Unspecified Disease	19	26	13	4	32			15		9		2
Internal Organ	14	22	2		37			15	2	12	2	7
Head Injury	8	22		9	35	9		9		4	4	9
Upper Torso Injury	12	3	71			14		3		9		
Poisoning	1	67		33								
Unspecified Injury	28	38	25	3	15	3	1	6	1	5		4
Other,Unspec. Etiologies	142	31	10	2	29	6	2	7	1	6	2	5
Don't Know	79	46	2	6	37	1	2	1		1	2	2
Refused	125	6	1	1	91	1						

*based on calls to listed telephone numbers

Table A2-3

SUMMARY OF RESPONSES TO SURVEY OF DISABILITY GROUPS

ORGANIZATION	NATURE OF PROBLEM ORGANIZATION IS CONCERNED WITH (V,P,L,M)*	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION WITH READING PROBLEMS	COMMENTS ON AFB ESTIMATES	COMMENTS ON AFB QUESTIONNAIRE AND PROCEDURES	SUGGESTIONS ON NLS/BPH PROGRAM	OTHER COMMENTS
American Association of the Handicapped/ Physical Education and Recreation	M			Seems higher than traditional estimates.	Questions tended to bias/slant answers. Had a broader interpretation of visual problems than usual.	More titles related to recreation, sports, health, physical activities and related areas. More information about accessible facilities and programs.	More emphasis is needed on activities promoting better physical fitness, motor proficiency and movement. More integrated programs and activities. Visually impaired persons must have major roles in planning and implementing these processes, including at policy and decision making levels.
American Coalition of Citizens with Disabilities	P	36 million		May be a bit low, difficult to assess.	Many disabled individuals fall below the poverty level and would not have phones.	More public awareness of program. More material aimed at continuing education, college level and selfhelp.	
American Council of the Blind.	V	2.5 million	62%	Seems credible, more persuasive than other national estimates.	Limiting factors of survey: people generally don't like to think about things in the first person, are not honest, don't like to get involved.	NLS should not be restricted to people with only physical problems.	Strengthen Radio Reading services - these avoid strain and difficulty, no scratched records or tapes, and reach alot of people simultaneously.
American Diabetes Association	M	6 million known, 4 million unknown	53,200			NLS program is very helpful to blind diabetics who often may be of advanced age, and have loss of sensation in fingertips, which makes use of Braille difficult.	
Association for Children with Learning Disabilities	L	undiscovered		No way of knowing if high or low.	Category "other physical problems" should have been broken down to specifically state "learning disabilities or visual perception".	NLS requirements should be changed to include authorization from social workers, psychologists, and LD teachers and consultants.	
Blinded Veterans Association	V	45,000	45,000			Not enough copies of the Bible, too many books on sex. Ordering forms are difficult to fill out. Receive unrequested or extra materials. More people should be eligible to sign authorization.	Most of the blinded veterans do not use Braille; many are slow readers with short attention spans.

*V = Vision Problems P = Physical Problems L = Learning Problems M = Multiple Problems

ORGANIZATION	NATURE OF PROBLEM ORGANIZATION IS CONCERNED WITH (V,P,L,M)*	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION WITH READING PROBLEMS	COMMENTS ON AFB ESTIMATES	COMMENTS ON AFB QUESTIONNAIRE AND PROCEDURES	SUGGESTIONS ON NLS/BPH PROGRAM	OTHER COMMENTS
Council for Exceptional Children	L,V	38,000	38,000	Seems high - discrepancy probably due to definitional differences - includes different ages and criteria.			
Hadley School for the Blind	V	12,000	12,000	'Seeing' estimates were good, although age distributions were a bit odd.	State distribution is a significant factor in telephone surveys.	Limiting use of machines to library use is silly. Machines should be able to be used by students as well.	Cassette machines should be able to record as well as play back.
Helen Keller National Center for Deaf-Blind	V,M	10-15,000	10-15,000	Estimates seem reasonable.	Most deaf-blind do not own telephones.	More publicity about NLS to reach the people who do not know about it.	More Braille. Improve ways to quickly get current materials into Braille, particularly news items.
Muscular Dystrophy Association of America	M	200,000			Survey was directed mainly at the blind. More general questions were needed. Should have sought problems related to disabilities.	Physical disability is not primary determinant of use of NLS program, rather it is the convenience and accessibility of receiving materials at home.	For MDs, holding is a minor limitation, turning is no problem, and when they reach the weakness stage, they are not alert enough to read.
Myasthenia Gravis Foundation	P	100,000	1-3%		Survey didn't relate - reading is not a felt need.	Greater exposure is needed through public campaigns.	High regard for program
National Association of the Deaf	Hearing	10-25,000 deaf-blind	10-25,000		Telephone surveys exclude deaf people.	Talking Books are out for the deaf.	Not many deaf Braille users - the Braille teletypewriter is an important effort in aiding the deaf-blind.
National Association for Retarded Citizens	L	6.8 million	26.8%		Respondents may not have understood definitions used in questions. Many retarded persons live in facilities, were missed by survey.		The survey provides a massive data base, and adds considerably to general knowledge regarding reading limitations.
National Association for Visually Handicapped	V	6.4 million		Estimates seem low.			
National Center for Deaf-Blind Youths and Adults	M	53,000	53,000		Questions were a bit difficult to understand.		Some are Braille users, but not many. Some are also mentally retarded.
National Eye Institute	V		3.3 million	Estimates are consistent with NCHS data.			

*V = VISION PROBLEMS   P = PHYSICAL PROBLEMS   L = LEARNING PROBLEMS   M = MULTIPLE PROBLEMS

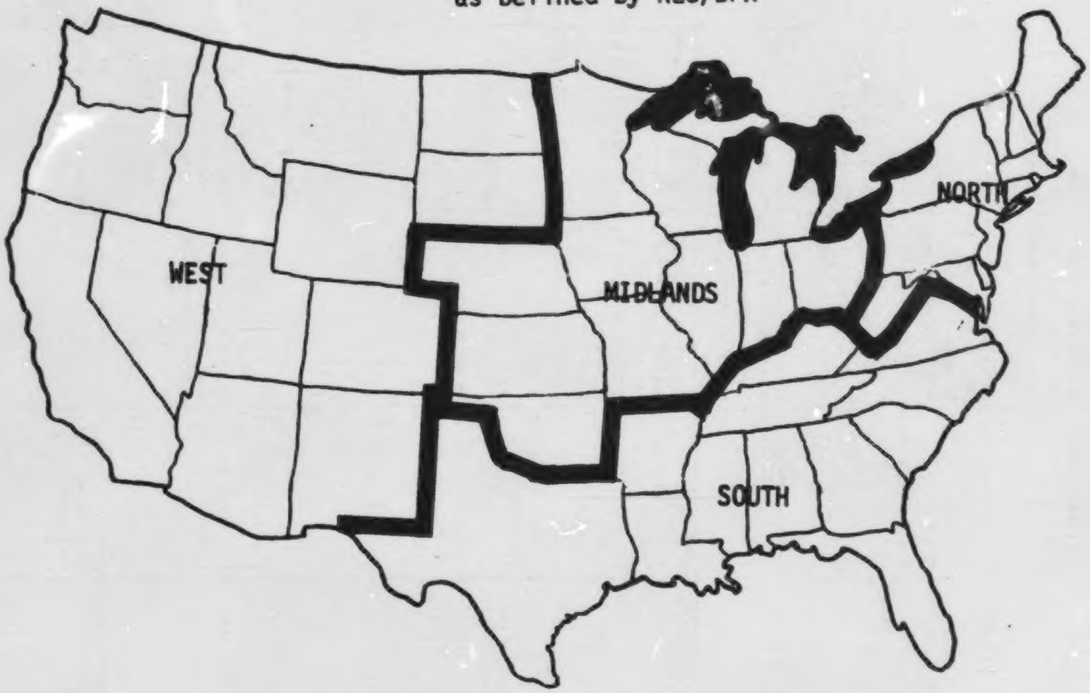
ORGANIZATION	NATURE OF PROBLEM ORGANIZATION IS CONCERNED WITH (V,P,L,M)*	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION	ORGANIZATION'S ESTIMATED SIZE OF TARGET POPULATION WITH READING PROBLEMS	COMMENTS ON AFB ESTIMATES	COMMENTS ON AFB QUESTIONNAIRE AND PROCEDURES	SUGGESTIONS ON NLS/BPH PROGRAM	OTHER COMMENTS
National Multiple Sclerosis Society	M	500,000		Estimates seem low.	Should have added a question about past past physical problems.	Excellent program. It is beneficial to many with MS.	Expand descriptive materials.
National Retinitis Pigmentosa Foundation	V	100,000			Many with RP may not be able to answer the telephone.		Advanced stage of RP is associated with many symptoms.
National Retired Teachers Association/ American Association of Retired Persons	M	11.7 million				More publicity - TBs should be made available through Senior Citizen Centers.	We do not collect vision and other disability data.
National Society for Autistic Children	L	250,000			Questionnaire had little bearing on autistic population.	No complaints.	
New York State Association for Help of Retarded Children	L	15,000	20%		Questions exclude mentally retarded who have visual perception problems but can still see to read.	Too much high level literacy type materials. Should make TBs simpler.	
Paralyzed Veterans of America	P	11,000	60%	Estimates are not surprising.			Very little functional data available.
President's Committee on Employment of the Handicapped	M	20 million	20 million	Estimates seem relatively accurate.	No comment.	More vocational material and reference works (e.g., legal codes) are needed. Walk-in services should be made available in public libraries. More publicity about program is necessary.	
President's Committee on Mental Retardation	L	2 million	2 million	Estimates are high.	Geared to vision. Didn't identify mental retardation as a condition.	Make service better known through publications other than those associated with the blind.	
United Cerebral Palsy Association	M	700,000	about 50%	Have no way of determining.		Have no experience to provide suggestions.	Visual perception problems and difficulty using havds are secondary in importance to the other needs of persons with cerebral palsy.

*V = VISION PROBLEMS   P = PHYSICAL PROBLEMS   L = LEARNING PROBLEMS   M = MULTIPLE PROBLEMS

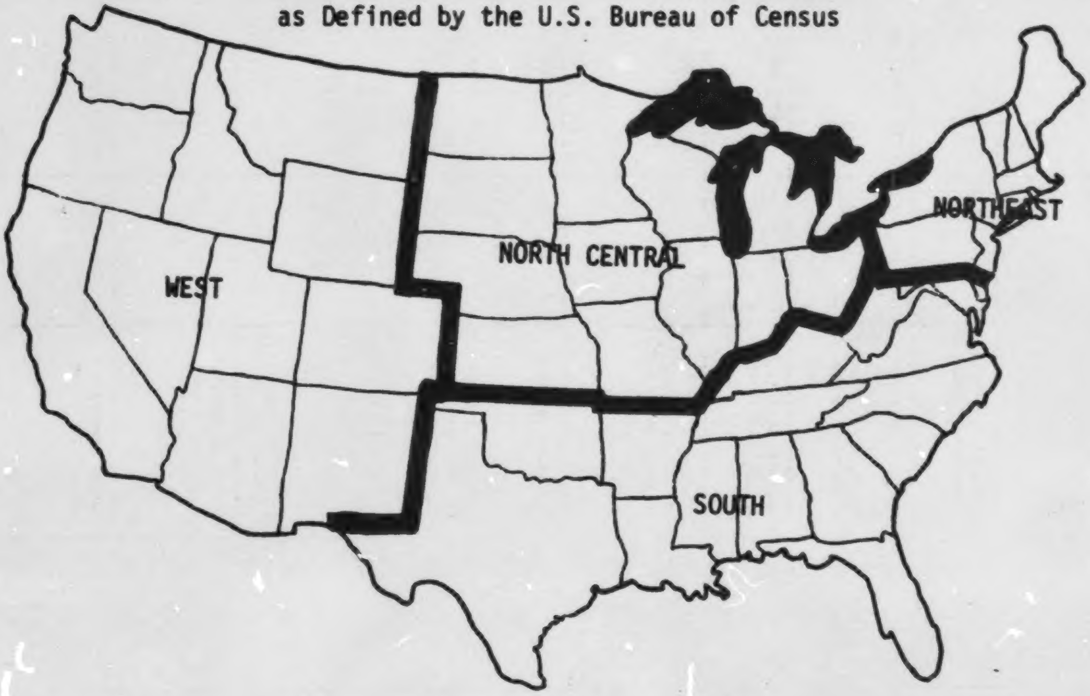
Figure A2-1

Comparison of NLS/BPH Regions and U.S. Census Regions

The Four Regions
as Defined by NLS/BPH


WEST
MIDLANDS
NORTH
SOUTH

The Four Census Regions
as Defined by the U.S. Bureau of Census


WEST
NORTH CENTRAL
NORTHEAST
SOUTH

CHAPTER 3

ANALYSIS AND IMPACT OF LIMITATIONS ON THE PROCESS OF READING

Having looked at the gross prevalence and distribution of print limitations among the potential users of print alternatives, we are now ready to examine in more detail the particular limitations which necessitate the use of print alternatives, and the impact of these limitations on the various components of the reading process.

We have introduced the concept of the "reading process" in order to see more clearly how print limitations affect an individual's reading behavior. In Chapter one, we said that the reading process could be thought of as consisting of eight distinct components: motivation; awareness; accessibility; selection; operation/control; endurance; comprehension; and sharing/utilization. We begin here by defining what we mean by each of these components, and then briefly discuss the most common ways in which limitations in using or reading print are thought to impact on these eight components of the reading process.

One general consideration to be kept in mind in reviewing the various components of the reading process is the individualistic nature of the impact of print limitations on a person's reading behavior. The effect of a particular limitation appears to be determined in large part by factors having nothing to do with the limitation itself, such as an individual's social role, responsibilities to others, living situation, support system, economic situation and motivation. These factors vary so much from individual to individual that there would seem to be no precise way of assessing the impact of a print disability on an individual's success with print alternatives or even on the likelihood that the individual will seek out alternatives.

Two quite different stories of how an individual might respond to the very same physical disorder may be helpful here to see why such a measure is impossible. To begin, let us imagine two persons, one a 40 year old father and family man, and the other a 72 year old retired widow, both of whom have suffered a loss of sight, hand coordination and memory as a result of a stroke. In the first case, the father may feel so compelled to support his family that he will seek out and obtain all the rehabilitative training he can to compensate for his physical deficits. If we imagine further that this father has a supportive wife and family who encourage him to learn braille, read him the daily newspaper in the interim, inquire about special rehabilitative programs and take him to such programs, and finally, help him to procure alternative reading materials and then discuss those materials with him, there is good reason to suppose that such an individual would in time recover all of the necessary capacities to return to an active, professional career, an essential part of which is reading.

Alternatively, it does not require stretching the imagination much to suppose that the retired, seventy-two year old widow would either never, or would only partially recover the abilities she lost as a result of the stroke. In the absence of any pressing external responsibilities to others, either in the form of a job or other family members to care for, there is not only less incentive to develop independent living skills, but there is also less of the necessary support, assistance and so forth. Assuming this widow were as highly motivated as our hypothetical father of forty, she would still have greater obstacles to overcome; not only would she have to find a way of becoming aware of rehabilitative programs, print alternatives and find a way of obtaining them, utilizing them and returning them, she would also have to overcome the more immediate obstacles of living alone in her new condition. Even assuming such obstacles were not insurmountable, and that this woman did begin to read again, without the possibility of sharing her reading experiences with others, she might eventually lose her motivation. Hence, it is clear that a particular physical disorder may vary greatly in its impact on an individual's reading behavior.

From considerations like the above, it became apparent that it was virtually impossible to discount any of the ways, either causal or indirect, by which a physical limitation might impact on any of the components of the reading process, because the two key factors--the external enabling and environmental factors, and the internal motivating factors--are so highly individualistic.

Similarly, we found it futile to try to correlate the effects of particular disorders with specific types of reading limitations, since these interactions depend on both the extent and severity of the disorder, and on whether the disorder exists in isolation or in combination with other disorders. To illustrate, severe arteriosclerosis may affect mental functioning by reducing the supply of oxygen to the brain, it may affect the individual's mobility and hence, his/her ability to acquire reading materials independently, or it may have both effects.

COMPONENTS OF THE READING PROCESS

Motivation

As we saw in the foregoing, motivation is a basic determinant of all purposeful activity. The willingness to focus one's attention and to commit one's time and energy to a task, to tolerate frustration and anxiety, and to persevere would all be impossible without the concomitant motivation to achieve some end. Some findings from the 1975 Gallup Survey of library use in the general population reflect the importance of motivation for reading and library use. The most common reasons given by the respondents for not using a library were: "no interest/no need" (35%), "not enough time" (24%), "don't read" (12%), "too far away" (12%) and "have enough books" (11%). Clearly, motivation is a fundamental ingredient in learning reading skills as well, whether the skills in question are for print reading, or for the use and enjoyment of alternatives to regular print.

To seek out and utilize compensatory rehabilitation programs, to learn to read and write without sight or dexterity, and to either operate record or cassette players, or master the braille code and its use requires a positive attitude and a willingness to utilize the remaining physical capacities to achieve desired ends. Once having decided that one wants to obtain rehabilitation, one needs the further patience and drive to actually withstand the redtape that government bureaucracies are notorious for: in order to qualify for, and obtain referral to one of the various social service agencies that provide print alternatives, one must usually go through the process of obtaining certification of one's disability status. For an older person with physical limitations, bearing with a system geared primarily to working-age, able-bodied adults can demand a high degree of motivation and patience. Obtaining large print, braille and recorded versions of magazines is not at all as simple as buying them at the corner newsstand.

Just as motivation appears to affect the impact of all print limitations on one's reading behavior, so also, motivation appears to be affected by all types of physical limitations. More simply put, with sufficient determination, it appears that one can overcome a print limitation, no matter how severe it is; and conversely, regardless of what sort of print limitation one has, it may attenuate one's motivation to keep reading or not, depending on what other purposes one has and what other factors are operating in one's environment.

Labelling and Self-Exclusion--An important issue which bears on the degree of motivation an individual has to find out about and utilize print alternatives is the extent to which one is willing to identify him/herself, or be identified as legally blind, disabled or otherwise physically impaired.

Often people are reluctant to be identified and categorized on the basis of their print disability, even though identification is usually a part of the application procedure to become eligible for the reading services provided by the NLS and other suppliers of print alternatives. Such "labelling" may stir up uncomfortable negative images and reminders that may push individuals into greater self-exclusion from many arenas of public life.*

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*Haber (1970), Kirk (1974), Nunnally (1961) and others have made this same point.

For the purposes of this discussion, the tendency to self-exclusion is not to be understood as something which inhibits the motivation to seek out and utilize print alternatives. Rather, it is perhaps best understood as the manifestation of a conflicting motivation, namely the desire to perceive oneself as a competent, normal, able-bodied person, rather than as an impaired person in need of special compensatory services. To avoid being labelled as "handicapped" an individual may choose to suffer what might appear to be far greater losses. Some hints as to the seriousness of this source of exclusion emerge from an examination of the data we gathered on the relation of "total blindness" to "legal blindness."

"Total blindness" is an easily understood term meaning the complete absence of sight, typically measured by the inability to detect light. Despite the common lore that every "blind" person faces only a black screen, total blindness is relatively rare. Our data show that about 85% of all persons with problems in seeing can discriminate colors, and that this percentage drops slightly to about 79% for persons unable to read regular print. Only 8% of those unable to read print are also unable to tell if a light is on or off. (NCHS, 1968 reports 4.5%.)

"Legal blindness" is a different and more complex matter. In the United States this term connotes that an individual has been tested by a physician or other authorized professional, and certified to have corrected vision poorer than a given standard, as set by federal and state laws, and is consequently eligible for government programs and benefits.

In America, the test of visual performance is usually based on the recognition of single letters (letter acuity), which introduces some cognitive factors.* The Snellen visual acuity is obtained by dividing the distance at which the patient recognizes a symbol by the distance at which a "normal" eye recognizes the same symbol, (e.g., 20'/20', 15'/20'). Although somewhat different from a test of reading acuity, in which the print size and distance from the eye both define the basic visual performance, the designation "legal blindness" (letter acuity of 20'/200' or poorer or a field of view of 10 degrees or less) is roughly comparable to being unable to see print of 8-12 point size at arm's length (18").**

In our sample, seven percent of respondents who reported that they had "difficulty" seeing also said that they had been certified as "legally blind": 35% of those "unable to see regular print" were "legally blind" (compared to 38% obtained by Josephson, 1963). Overall, about one-fifth of our respondents mentioning visual limitations had such certification. This is in the range of the national estimates.*** Viewed another way, these findings show that 14% of the legally blind have "difficulty" seeing regular print, and 86% are "unable" to see regular print.

One might ask how it can be that as small a proportion as 35% of all persons unable to see regular print are "legally blind?" Could the small size of this group be attributed to the self-exclusion phenomenon (i.e., to persons consciously or unconsciously avoiding formal certification of legal blindness)? The only real test of this possibility would be to conduct optometric exams of visual acuity compared to reported reading ability. To date, little clinical research has been done on this issue.

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*Recognition of characters or shapes, or of the orientation of gratings might be used also, which might have a lower cognitive component.

**There is no single type size that specifies "regular or ordinary print," but the common range is 8-12 point. Large print is normally in the range of 14-24 point. Headlines are typically 36-98 point.

***Persons who test as totally blind would automatically qualify as legally blind if they sought such classification. Nationally, from our data, about 485,000 persons reported themselves "legally blind," as compared to about 100,000 persons who reported they were totally blind. This compares with prior estimates by the National Society for the Prevention of Blindness, which were in the range of 500,000 legally blind.

There are some data from our survey, however, that support the suggestion that the tendency to self-exclusion is significant. Eighteen percent of the "legally blind" reported that they are totally blind, i.e., that they could not tell if a light is on or off. This figure represents only 81% of the "totally blind." The remaining 19% of the "totally blind" reported that they were not registered as "legally blind." As one wit put it, these non-registered eligible persons may be considered "illegally" blind. This data is shown below.

Distribution of Persons Who are Totally Blind Among Those Who Report Being Legally Blind

Reported Status	Weighted Sample Size	Total	Totally Blind	Not Totally Blind
		-------	Percent	-------
Legally Blind	(1306)	100	18	82
Has Problem in Seeing but is not Legally Blind	(4614)	100	1	99
Total of All Persons With Problems in Seeing Print	(5920)	100	5	95

The implication of self-exclusion for the National Library Service, which requires certification of condition, is clear. People may not make use of the service if they feel it requires them to identify with disabilities they have not fully accepted. The road to use of the service might be made easier by modifying or dropping terminology and formal names that are often construed negatively by the recipients of services. It is our observation that all individuals wish to be recognized as persons first, with minimal attention being drawn to their special characteristics or needs.

Awareness

In the preceding section on labelling and self-exclusion, we posed the question of how so few of the people who are either incapable of or have difficulty seeing regular print could be certified as "legally blind." One factor, we said, that might contribute to this phenomenon of underutilization of print alternatives was the unwillingness to publicly identify with, or accept, one's impairment. Another factor that may have an effect on the use of alternate reading media is the degree of awareness on the part of persons with print limitations about the availability of reading services and the procedures involved in establishing eligibility for those services.

With respect to the reading process, we mean by "awareness" the knowledge of what materials are available and where and how to get them. Awareness is obviously a central issue in the utilization of print alternatives, and in the process of reading generally. Unless one has a sense of what materials are available, from where, and at what costs or efforts, one will not be likely to do much reading. Only with such knowledge is a genuine choice possible.

Though the level of awareness of reading options would not seem to be directly affected by any one type of print limitation more than any other, it would seem to be affected by the severity of one's print limitation--where "severity" is understood loosely here in the sense of how able one is to make do without print alternatives. Intuitively, it seems that of two people who have the same interest in reading, and hence, the same motivation to find suitable reading materials, the individual who was less able to read regular print* would be more aware of alternatives to print. On this analysis, the motivation to find out about and avail oneself of alternate media to regular print is understood to vary with the need for them. The other side of the coin, of course, is that the more one needs print alternatives, the more severe one's print limitations, the more difficult it may be to find out about them. Thus, it seems that the most one can say is that insofar as awareness of print alternatives and rehabilitation options is a function of motivation, and motivation is potentially affected by all types of print limitations, so too is awareness.

Accessibility

In order to make use of alternatives to print, it is not sufficient to be motivated to obtain materials and to be aware of sources of braille or talking books, though both of these components are, of course, essential to the reading process. In addition, one must have access to reading materials.

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*As we shall see in Chapter 6, in our discussion of the reading habits of persons with print limitations, the majority of persons prefer to read regular print whenever possible.

Accessibility has two facets: the first pertains to the physical abilities of the individual to get from place to place, to explore reading options; and the second involves the availability or proximity of reading materials to the potential user of print alternatives, or, more generally, to the ease of obtaining the desired reading materials. The second facet, then, has organizational aspects which are beyond the reader's control.

The extent to which an individual has access to reading materials is a function of one's motor abilities, visual competence and general health. If a person is unable either to sit up or to see, he/she may be unable to perform even the simplest activities, such as getting up out of bed and going to the mail box to collect print alternatives sent by the NLS, or to read and fill out order forms, without assistance.

Accessibility, like the preceding components of the reading process, is a function of both internal or psychological factors and external or environmental obstacles which may reduce one's motivation to find out about and obtain reading materials. A fear of injury, crime, inadequate transportation, architectural barriers and general difficulty may all become serious impediments for elderly, disabled persons. A few examples of such obstacles are stairs, curbs, hurried pedestrians, bus stops without benches to sit on while waiting, labyrinthine building designs, inadequate signs for how to get from place to place and a lack of personal assistance.

In Handicapping America, Frank Bowe paints a picture of a society blind, deaf and dumb to the problems it creates for the one-out-of seven Americans who have work, school or home disabilities. A population that has difficulty in communicating with the external environment, and that is not assisted by the healthier members of society, may unfortunately suffer a reduced motivation to explore that world through reading.

For the National Library Service, which mails records, cassettes and braille versions of books and magazines directly to subscribers' homes at no cost to the user, the significance of proximity as a factor in utilization is much less certain. For, unlike users of regular reading services, the subscribers to the National Library Service rarely visit any of the 158 regional or subregional libraries. Our survey of 16 regional libraries, discussed in Volume 4, found that subscriber visits averaged only one per day. Therefore, in place of the usual variables of travel distance or hours of services affecting accessibility, it seems more appropriate to emphasize variables related to the effectiveness of the NLS libraries in filling requests, the timeliness of postal deliveries, and the ease of obtaining and returning materials through the mail.

Overall, it appears that the less physically able an individual is to see, to sit up, and to negotiate the environment, and, therefore, to transport oneself to a place that provides reading materials, the more important the external or organizational factors become. In contrast to the use of neighborhood public libraries, which does not necessarily increase by virtue of the proximity of the library to the potential users (Gallup, 1975) the utilization or circulation of reading materials from the NLS collection has tended to increase in recent years with the growth in the number of state-wide and local public libraries providing print alternatives.* One reason for the disparity may be that persons with print limitations have relatively few sources of reading materials, and are, therefore, more likely to utilize those that do exist, while persons who have no difficulty reading regular print have a plethora of sources of reading materials, and, therefore, any particular library is less essential to them, regardless of its proximity. Another reason for the increased circulation may be faster mail services resulting in a more rapid and more frequent turn around of book requests by mail.

Selection

Selection, the final step in the reading process before one begins to operate on the reading media, is the culmination of the three preceding steps--motivation, awareness and accessibility--and could not take place without any one of them. In the absence of the ability to find out about and obtain print alternatives, either on account of a lack of sufficient motivation and perseverence, a lack of awareness as to where and how to order materials and what materials are available, or a lack either of personal assistance ordering materials, or of sufficient accessibility to reading materials, an individual would not arrive at the point of actually selecting an item to read.

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*One of the fastest changing trends in library services for persons with reading limitations has been the expansion in the last ten years of local public libraries, designated as "NLS subregional libraries," that provide print alternatives. The growth of these local facilities is an indication that the public library network is coming to view the disabled subpopulation as an extension of the general population and a segment of its existing market, rather than as an entirely separate market. The trend may also reflect an attempt on the part of the librarians to retain their aging readers.

By "selection," then, we mean the act of choosing reading materials. This seemingly simple act has two distinct components: one is the input component--i.e., obtaining information about the potential reading choices--and the other is the output mechanism --i.e., conveying one's choice of reading materials to either a distributor of print alternatives directly, or to another individual who will actually obtain the desired reading materials. The input component may vary from listening to a friend, an advertisement, or scanning a Braille, regular print or large print book or magazine. The output mechanism may involve dialing a telephone number and talking to a staff member of one of the NLS regional libraries or Recording for the Blind centers, or filling out an order form and depositing it in a mail box.

To mention only the input and output functions, of course, leaves out the crucial step between those two functions, that of actually making a choice. The ability to make a good choice is itself dependent on both internal and external factors; the internal factors include such things as one's ability to assimilate material and to perceive and discriminate between different options, and the external factors encompass such things as the adequacy of the descriptions of available materials, or, more generally, those factors over which the individual has little or no control.

It appears, then, that the selection process is dependent on a wide range of facilities, both physical and mental. If one has a hearing limitation, several avenues of obtaining information required to make one's choices are immediately closed; and the same holds for seeing and learning disabilities. Similarly, speech, dexterity, health and mobility limitations will affect one's ability to perform one or more of the possible output functions. To illustrate, roughly 25% of the respondents in our household survey were reported to be unable to use a telephone independently; these persons would obviously be unable to avail themselves of the toll-free telephone services made available by many of the regional libraries for subscribers to obtain information about and order books and magazines.

The only limitation which would not seem to impact directly on the selection process is weakness. This might, however, limit one's motivation to read, and so indirectly affect the selection process, by rendering it superfluous.

Operation/Control

The most crucial component of the reading process for our purposes in this study, and the one which is most commonly taken for granted in in studies of reading, is the operation/control component. Just as the ability to select appropriate reading materials becomes otiose in the absence of sufficient motivation to read and an awareness of and accessibility to reading materials, so too all of the preceding components become superfluous in the event that one is unable to successfully operate or control any of the reading media provided by suppliers of print alternatives.

Because the operational control component of the reading process is the key issue in the utilization of print alternatives we have devoted considerable attention to it in the pages that follow, and so shall only briefly define what is meant by it here.

By "operation" or "control" we mean the physical abilities to utilize the medium (or media) in which the reading materials are presented. These abilities fall into four general categories: gross and fine motor abilities, seeing and hearing abilities. Gross motor abilities include such things as: sitting up to read, having the strength and sensitivity in one's arms to hold a book, turn pages, etc. The phrase "fine motor abilities" designates the ability to perform specific operations such as turning a switch, pushing a button, placing the arm of a needle on a record; these motor abilities are essentially arm, elbow, wrist and hand functions. Motor abilities might at first blush appear to be less crucial to the successful utilization of print alternatives than seeing and hearing abilities, yet in examining the operation component of the reading process more carefully, it becomes clear that whatever alternative to regular print one elects to read with, one will need either some motor abilities to manipulate the medium in question, or the assistance of another person.

In sum, the process of physically controlling the reading media is affected by all reading limitations with the exception of weakness and learning. (The impact of these limitations on the reading process is taken up elsewhere.)

Relation of Operation/Control to the Different Reading Media--The specific physical abilities required for use of the various types of reading media are indicated below:

Regular Print

The ability to see, to grasp and hold a book, magazine or newspaper, to lift the reading matter, to turn the pages, to sit up, and finally, to coordinate the various activities and maintain stability are all required for the utilization of regular print.

Large Print

The only difference between the abilities required for large print and those for regular print is in the degree of visual acuity one has; for the former, of course, it need not be as good. (But reading with a reduced visual field, as in large print, is much slower than reading regular print.)

Braille

For braille, one needs all of the motor abilities or manual dexterity required to read print, as well as the further ability to discriminate between the different raised dot configurations with one's fingers which we shall call tactile sensitivity. A lightness of touch, the ability to relax the hand, and to perform continuous tracking movements with the hand are also required. Sight, of course, is not required in the use of braille, nor is hearing.

Records

To successfully utilize records one must be able to grasp, hold and lift the record, turn it over, take it out of its jacket and put it back in, to locate the spindle, place the record on the spindle; in addition, one must have the find motor control to move the needle to the proper point on the record, and the strength to push the on/off switch, and to manipulate a button or knob, controlling the volume, tone or speed. Hearing, of course, is the fundamental ability, without which none of the other abilities would serve any end.

Cassettes

> Cassettes, like records, require that one be able to remove the cassette from its storage cartridge and replace it, push the eject control, lift the cassette, insert it in the cassette player, push the on/off switch and push or turn the fast forward, the reverse, and the volume, tone and speed controls. Hearing is, of course, essential here as well.

Another Person

> Hearing is the only essential requirement for being read to by another person. Speech and/or writing abilities are, of course, fundamental ways to communicate with a reader, but such abilities may be limited for stroke victims, who nonetheless may enjoy reading by listening.

Endurance

By "endurance" we mean the physical stamina to perform any of the operations of reading required for the particular medium one chooses to read with for more than a few minutes without discomfort, pain or fatigue.

The inability to sustain any given activity for a substantial length of time would be likely to reduce one's motivation to read. If, for example, an individual is unable to hold a book for more than a few minutes without discomfort, or lacks the dexterity to easily turn the pages of a book, he/she would presumably be disinclined to do much reading, and so seek other means of fulfilling the same end.

It appears that each of the limitations to reading print would impact on one's ability to perform at least one, if not more, of the activities involved in utilizing alternate media to regular print for a substantial length of time. Even if one were able to see well enough to read print, for example, albeit with difficulty, any loss of visual acuity would create that much more of a strain in doing so; likewise for hearing, and motor abilities. Thus, in addition to the motivation required to find out about and obtain reading materials, one may need additional motivation to overcome the limitations affecting one's ability to read with print alternatives for more than a couple of minutes without fatigue at any given sitting. And as we saw above, one's motivation to persevere in an activity, may well be lessened by any of the limitations to reading print.

Comprehension

The intricacies of how one learns to comprehend the written word, and the extent to which one's cognitive capacities are inherited and the extent to which they are a product of training, largely fall outside the domain of this study. In examining the factors involved in the utilization of print alternatives, we have assumed that one needs all of the cognitive abilities required for reading print and more. It is the "more" that we have been concerned with here; that "more" we have characterized by and large in physical terms. By "comprehension," however, we mean the intellectual and cognitive capacities to read. Vague as this definition is, we mean to capture by it such abilities as acquiring and assimilating a wide range of cultural information, the most crucial of which for linguistic purposes generally is the use of concepts. In order to read one must not only be able to use concepts, but also to translate visual or auditory stimuli (marks and symbols) into meaningful concepts. This process involves the ability to distinguish a figure from the background or masking context, and the perseverance or ability to repeat the same response even if the stimulus is altered. Other requisite abilities are: following a line of reasoning, assimilating and retaining material and concentrating on the reading material.

The degree and nature of the concentration required to successfully utilize alternatives to regular print would seem to vary with both the media used to read, and the particular abilities and reading limitations of each reader. One person, for example, may find it exceedingly difficult to concentrate on reading material that is read to them, while another individual may be unable to either accurately receive visual stimuli or to translate those stimuli into meaningful concepts, but may enjoy being read to or listening to Talking Book records and cassettes. Thus, while it does not seem possible to generalize about the degree of concentration required for the various reading media, it is clear that one's ability to concentrate on and, therefore, comprehend reading materials may be affected by each of the reading limitations.

Sharing/Utilization

Reading might at first blush appear to be a relatively asocial activity, in that, like solitaire, one (for the most part) does it alone. However, if one examines the motivations for reading, it appears that more often than not they are tied up with other social pursuits, such as the desire to effectively perform social roles, to obtain information about one's environment, or to seek the community of others--whether those others be characters in a work of fiction, notable political and social figures, or other individuals who have read and wish to discuss the same reading matter, or to establish a common frame of reference. On this telling, it appears that the ability and opportunity to share one's reading experiences with others is as essential to the reading process as the ability to operate on the reading media. Thus, the sharing/ utilization component of the reading process is integrally bound up with the reasons why people read and the ways in which they integrate their reading experiences into their lives.

We saw in Chapter 1, that there are essentially two reasons for reading:instrumental (to obtain information and carry out work or school responsibilities), and expressive (to derive pleasure). Regardless of which purpose one has, the reading experience is likely to be more rewarding if there is an outlet for one's experience, that is, if one has a means of communicating what one has read to others, and so integrating that experience into the rest of one's life. The more gratifying the reading experience is, the more likely one is to do more reading. Thus, sharing and utilizing reading materials, the last component of the reading process, closes the feedback loop, taking us back to the first component, the motivation to read. Just as the opportunity and the capacity to share one's reading experiences, may be an incentive to read, the lack of such opportunities may reduce one's motivation to read.

As significant, therefore, as the effects of reading limitations on the preceding components of the reading process are their effects on one's ability to express one's ideas and impressions to others. Many persons with impairments in the receptive elements of seeing print, and/or the sensory processes of hearing recorded versions of books or tactually reading braille, are prone to limitations in the expressive activities of writing, talking and non-verbal communication as well. Poor articulation, vocalization disturbances associated with muscle dysfunction or paralysis, speech idiosyncracies in content and style, deficits in verbal and written language skills, a poor knowledge of and facility in braille, slow reading, functional illiteracy and the inability to read at chronological age level are common communication difficulties attendant to all of the reading limitations reported. The inability to successfully express oneself on account of any one of the above attendant impediments may inhibit one's ability to share one's reading experience, and thus, in turn, one's motivation to read.

Summary--The Process of Reading

Table 3-1 summarizes the most common ways in which the reading limitations studied were thought to impact on the reading process. As shown, we were not able to distinguish precisely the ways in which the limitations in seeing, manual dexterity, weakness and learning interacted with the process components of motivation, awareness, access, selection and sharing/utilization. The quantitative data which was collected and developed on these interactions, to be discussed in Chapters 5-8, does not show a great deal of discrimination by limitation type or severity. Age, background, education and other environmental factors appear to be more significant determinants of impact. This is consistent with our conclusion that these components are all highly associated with motivation, which itself is affected by each of these factors.

In the next section of this chapter, we take up the elements of the process most physiologically related to the limitations themselves--operation/control, comprehension and endurance.

Table 3-1

Basic Ways in Which Limitations in Reading or Using Regular Print Affect the Reading Process

	COMPONENT OF READING PROCESS							
Limitations in Reading or Using Regular Print	Motivation	Awareness	Accessibility	Selection	Operation/Control	Comprehension	Endurance	Sharing/Utilization
Seeing	X	X	X	X	X			X
Manual Dexterity								
Holding	X	X	X	X	X			X
Turning	X	X	X	X	X			X
Sitting Up	X	X	X	X	X			X
Weakness	X	X	X	X			X	X
Learning	X	X	X	X		X		X

OPERATION/CONTROL

Seeing

In terms of the prevalence of reading limitations in the sample, difficulties in seeing well enough to read regular print dominate all other reading limitations. Though seeing is not the most serious limitation for everyone, nearly seven-eights (87%) of the sample do have trouble seeing to read. Nearly half (47%) of the sample reported that they were unable to see well enough to read regular print; an additional 39% said that they had serious difficulty in reading due to vision problems; and about 11% were not able to discriminate colors. (See Table 3-2.)

Manual Dexterity/Motor Control (Holding Reading Materials, Turning Pages)

Limitations in manual dexterity were less common than vision loss, but were also reported frequently. Eight percent were unable to hold a book or magazine; 11% had serious difficulty in doing so; seven percent were unable to turn pages; and nine percent had serious difficulty in turning pages.

In addition, eight percent said that they were "physically unable to operate totally by themselves" a radio or television in their homes; 24% cannot operate a record player; and 37% reported that they cannot operate a cassette player. Consequently, a substantial portion of this group is cut off from mass media for entertainment and information, as well as from print, without the help of others.* Table 3-3

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*Ninety-nine percent of the respondents had access in their homes to a television, 97% to a radio, compared to 71% to a record player, and 40% to a cassette player. The correlation between having a device in the home and being able to operate it showed a negligible association, except possibly for cassette players where the Pearson correlation coefficient was 0.31.

Table 3-2

Distribution of Persons with Limitations in Reading by Type and Severity of Limitation

		HAVE LIMITATION		DO NOT HAVE LIMITATION
LIMITATION TYPE	Total	Inability to Perform	Difficulty Performing*	No Difficulty Performing
Operation/Control of Medium				
Seeing	100	47	39	14
Holding Reading Materials	100	8	11	82
Turning Pages	100	7	9	85
Sitting Up	100	6	6	88
Endurance				
Weakness After a Few Minutes	100	36	10	54
Learning/Comprehension**				
Any Learning Limitation	100	-	35	65
Perception+	100	-	22	78
Memory/Confusion/ Attention Span+	100	-	9	91
Mental Retardation/ Slow Learning+	100	-	5	95
Other	100	-	1	99

*All limitations in learning/comprehension were considered difficulties rather than inabilities.

**An assessment of the primary types of learning/comprehension limitations was made. A plus sign (+) indicates that the category may include other learning limitations in addition to the primary one given.

provides these data.

Sitting Up

The ability to sit up is important for the performance of most daily activities, including reading. It reveals something about the overall functioning of the body. In our sample, six percent of the respondents were unable to sit up to read; and another six percent had serious difficulty in doing so. Of course, it may be possible to read while lying down, but such does not appear to be comfortable or to facilitate reading for any length of time.

ENDURANCE

Closely related to the operation of reading is the factor of endurance. Meaningful reading generally takes time, except perhaps reading letters, signs, advertisements and other short pieces. Persons who are unable to read for more than a few minutes because of weakness and fatigue are limited in their ability to find meaningful materials of a length that can be absorbed in a single session. Significantly, 36% of the sample reported that they were unable to read for more than a few minutes without weakness and fatigue; another 10% indicated that they had difficulty in reading for more than a few minutes without fatigue.

LEARNING/COMPREHENSION

Reading involves a complex intellectual activity. One must recognize words, remember meanings and usage, and be able to absorb and integrate

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Table 3-3

Distribution or Persons with Limitations in Reading Who Are Unable to Operate Information and Entertainment Media - by Type of Limitation

	Weighted Sample Size	Tele-vision	Radio	Record Player	Cassette Player
Limitation		-- Percent Unable to Operate ---			
Seeing					
No Difficulty	(1028)	9	7	19	31
Difficulty	(2788)	4	4	17	33
Unable	(3415)	12	10	30	44
Holding					
No Difficulty	(5914)	5	4	18	34
Difficulty	(767)	13	10	40	48
Unable	(550)	41	36	37	67
Turning					
No Difficulty	(6100)	5	5	19	34
Difficulty	(632)	15	12	41	50
Unable	(498)	41	36	65	72
Sitting Up					
No Difficulty	(6351)	6	6	20	35
Difficulty	(439)	16	13	40	50
Unable	(440)	39	29	58	64
Weakness					
No Difficulty	(3927)	5	4	15	40
Difficulty	(695)	10	8	32	47
Unable	(2609)	14	12	35	46
Learning/Comprehension					
No Difficulty	(4709)	8	7	23	37
Perception +	(1563)	6	6	22	37
Memory/Confusion/ Attention Span +	(609)	7	9	21	37
Mental Retardation + Other	(352)	21	21	37	56
Total	(7321)	9	7	24	38
Weighted Sample Size	(7321)	(608)	(523)	(1643)	(2557)

ideas whether one is reading for information, for pleasure, or to while away the day. We have labelled this aspect of the reading process "Comprehension." Impairments in reading comprehension or "learning" were reported by 35% of the sample. The greatest percentage of problems were in: Perception, e.g., reversing letters or words, following a line (22%); Memory, confusion and attention span, (7%); and Mental Retardation and Slow Learning, (5%). Eleven percent of the sample were reported to have two or more specific learning disabilities. Half of those who reported having learning problems indicated that they have difficulty following instructions that have several steps.

CHRONIC CONDITIONS AFFECTING READING

The most common chronic conditions found to result in print-reading limitations are reported in Table 3-4. For difficulties in seeing, the data are comparable to the Health Interview Survey findings of the National Center for Health Statistics. Cataracts, glaucoma and refractive problems were the most frequently reported disorders. (Notably some 10% of the persons with vision problems reported diabetes.) It was somewhat surprising to find that persons suffering from brain damage or a stroke reported limitations in seeing as frequently as they did in manual dexterity or learning. (No comparable data to our study results are available for reading disabilities other than visual limitations.)

In many cases, the symptoms of health conditions were reported rather than the conditions by name. Interference with voluntary movements, hyperactivity, problems in coordinating body movements, diffi-

Table 3-4

Chronic Conditions Resulting in Limitations in Reading or Using Regular Print - 1977

CONDITION	Percent of Total Population
Limitations in Seeing	
Cataracts	30
Refractive Problems	23
Glaucoma	11
Diabetes	10
Retinal Disorders	7
Other Eye Conditions	41
Brain Damage/Stroke	6
Diseases and Other Physical Conditions*	31
Limitations in Manual Dexterity/Motor Control/ Weakness (Holding, Turning and Sitting Up)	
Arthritis/Rheumatism/Gout, etc.	21
Repeated Spinal/Back Problems	10
Muscular/Motor Absence	9
Brain Damage/Stroke	8
Diseases and Other Physical Conditions*	36
Limitations in Learning/Comprehension	
Aphasia/Dyslexia	11
Memory/Confusion/Attention Span	6
Slow Learner/Mental Block	4
Mental Retardation	4
Brain Damage/Stroke	3
Other Conditions*	8

Notes: Weighted sample size was 7321 persons. Percentages add up to more than 100% for several reasons: a) a single condition may have multiple effects--e.g., a stroke may cause both learning and seeing limitations; b) two or more conditions may cause limitations of the same type--e.g., diabetes and glaucoma may both cause seeing limitations; and c) an individual could have reported the same condition in two ways--e.g., as a retinal disorder and as diabetes.

*See Table A2-2 (in the appendix to chapter 2) for a further breakdown.

culties in fine motor control and tactile perception, balance problems, tonal abnormalities, atrophy or weakening of muscles and joint or postural problems were reported as attendant affects for some of the respondents.

COMBINING RELATED TYPES OF READING LIMITATIONS FOR ANALYSIS

In order to see more clearly the ways in which reading limitations interrleate and affect people's lives, it is necessary to forego some detail. Therefore, we have combined categories that our analysis showed were clearly related. This analysis had two components:

1. Analysis of the ways in which multiple reading limitations affect the same individual.
2. Analysis of the limitations in relation to some criterion variables (e.g., age, sex, education, income and reading). This indicated limitations that were highly associated--i.e,, ones which affected the same individuals, or for which the individuals had similar characteristics or behaved similarly.

Based on these steps, we combined four specific limitations into two broader categories:

1. Holding and Turning - Manual Dexterity; and
2. Sitting and Weakness - Endurance.

In turn, further analysis led to combining the Manual Dexterity and Endurance factors into a single "Physical Disability Factor." Table 3-5 illustrates the patterns of association between two of these types of limitations. and shows how they were combined.

After developing these combinations of closely related limitations,

Table 3-5

Interrelations Between Limitations in Holding a Book and Turning Pages

Table 3-5a

Percent of Those With Holding Problems Who Also Have Problems Turning Pages

Holding a Book: Level of Problem	Total	Level of Problem in Turning Pages: No Difficulty	Difficulty	Unable
	------------	------------Percent	------------	------------
No Difficulty	100	98	1	1
Difficulty	100	29	61	10
Unable	100	61	15	68

Pearson Correlation Coefficient, r = 0.78
Weighted Sample Size is 7321

Simplifying After Analyses With Criterion Variables

Table 3-5b

Percent of Total Sample Who Have Holding and Turning Limitations

Holding a Book: Level of Problem	Level of Problem in Turning Pages: No Difficulty	Difficulty	Unable
No Difficulty	81		
Difficulty		12	
Unable			7

Simplifying to Obtain Compound Problem

Table 3-5c

Holding/Turning Problem

Level of Problem	Percent of Total
None	81
Some	12
Severe	7

an additional analytic step was necessary in order to move toward a more "person-oriented" analysis of how reading limitations "co-exist" in individuals. This step involved reducing the number of possible ways of presenting the limitation data to a more manageable and meaningful number, which could be worked with and presented easily.

"Person-Oriented" View

A variety of formats were explored in order to present in a relatively simple fashion an overall portrait of the total set of reading limitations affecting individuals.

The disability types included in the format of limitation typologies that we will be using frequently are:

Single Limitations

- Seeing
- Learning
- Physical

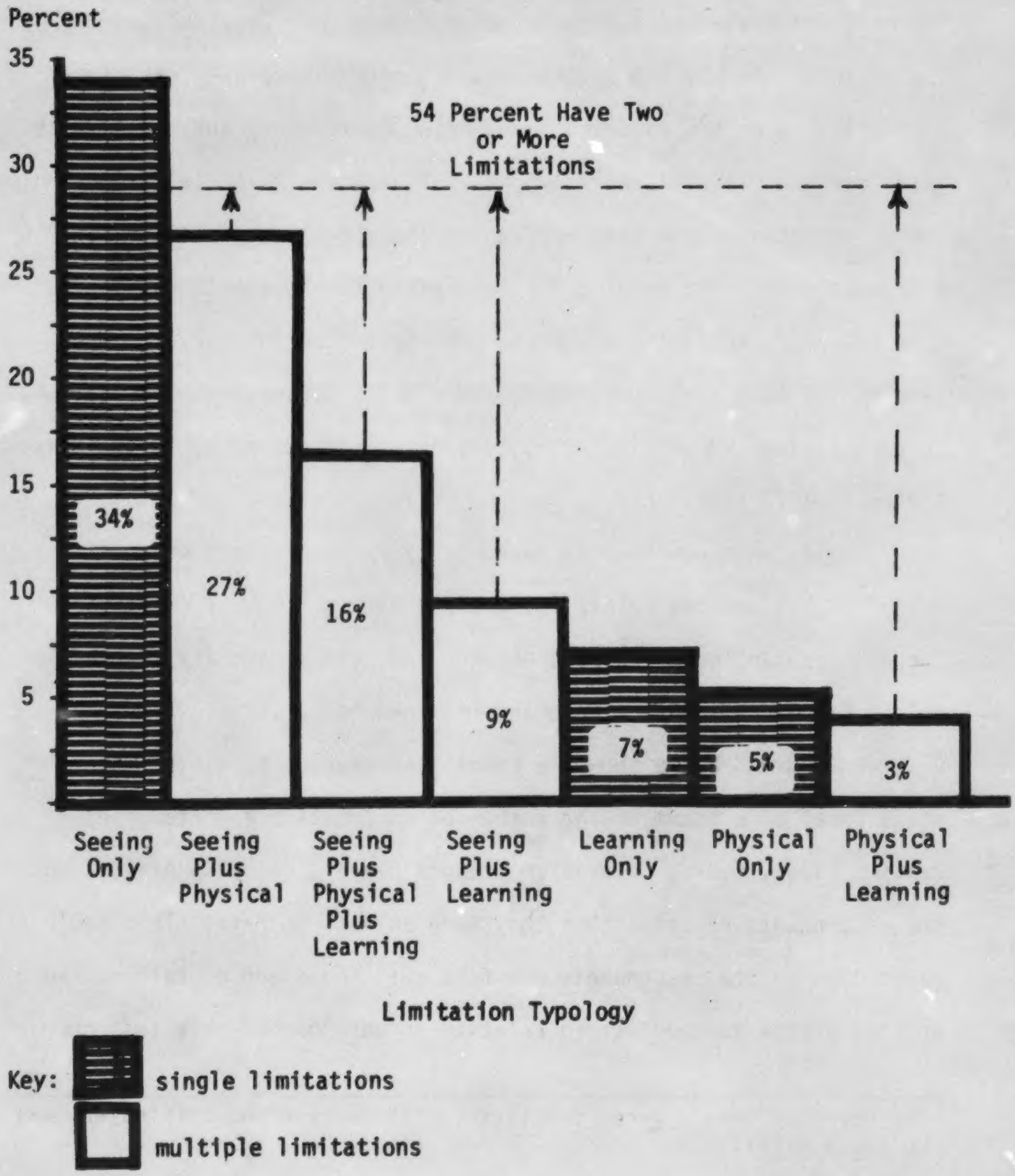
Multiple Limitations

- Seeing plus Physical
- Seeing plus Physical plus Learning
- Seeing plus Learning
- Physical plus Learning

In this classification, some information regarding the severity of each limitation has been sacrificed for the sake of more clarity regarding the individuals' overall needs. Figure 3-1 gives some data on the frequency of each disability type in this classification or limitation typology. We can now see that over half (54%) of the group

Figure 3-1

Distribution of Persons with Limitations in Reading Regular Print - by Limitation Typology



has limitations of at least two broadly different types in reading regular print: 27% have both seeing and physical difficulties; 16% have visual, physical and learning difficulties; nine percent have both seeing and learning difficulties; and three percent have both physical and learning limitations. Of the 46% of the respondents who have only one major limitation type, the majority have seeing limitations only (74%); 15% have learning disabilities only; and 10% have physical limitations only. These percentages have been applied to the prevalence estimates of 2.64 million persons with reading limitations in the household population that was prepared in the Screening Sub-Study (see Chapter 2). The results indicate that there were some 713,000 persons with limitations in both seeing and physical ability (dexterity/endurance) in the United States in 1977 (see Table 3-6).

Table 3-7 shows how the seven category "person-oriented" distribution of limitations relates to the severity of those limitations.* The high proportion of respondents who indicate a capacity to read for only a few minutes before becoming fatigued is striking.

In Table 3-8, we show the results of developing a fine motor control scale based on a count of the number of information/entertainment receivers (i.e., radio, television, record player, cassette player) which the respondents reported that they were able to operate. This table also gives data on the respondents who felt that the speed of talk on radio and television is too fast in relation to our "person-oriented" approach.

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*The severity levels were: inability, difficulty or no difficulty, and multiple difficulty.

Table 3-6

Prevalence of Limitations in Reading or Using Regular Print According to Whether They Exist Singly or in Combination U.S.A. - 1977

Limitation Typology	Prevalence (1000's)	Percent	
Persons With Single Limitations			46
Seeing	884	34	
Learning	183	7	
Physical	131	5	
Persons With a Combination of Limitations			54
Seeing and Physical	709	27	
Seeing, Physical and Learning	419	16	
Seeing and Learning	236	9	
Physical and Learning	78	3	
Total	2,640		100%
Weighted Sample Size	(7321)		

Table 3-7

Distribution of Persons Who Are Unable to Read Print or Have Multiple Learning Difficulties - by Type of Limitation

Limitation Typology	Weighted Sample Size	Total	Percent Unable to:					Percent Having Multiple Learning Difficulties
			See	Hold a Book	Turn a Page	Sit Up	Read for More Than a Few Minutes	
Single Limitation								
Seeing	(2427)	100	56	-	-	-	-	-
Learning	(485)	100	0	-	-	-	-	51
Physical	(342)	100	-	29	25	11	53	-
Multiple Limitations								
Seeing and Physical	(1939)	100	61	13	12	13	74	-
Seeing, Physical & Learning	(1190)	100	49	16	13	12	71	22
Seeing and Learning	(646)	100	45	-	-	-	-	26
Physical & Learning	(201)	100	-	10	15	6	69	64
Total	(7321)	100	47	8	7	6	36	32

Table 3-8

Distribution of Persons with Problems in Fine Motor Control and Speed of Speech on Radio and Television - by Limitations in Reading Regular Print

Limitation Typology	Weighted Sample Size	Percent of Persons Who Can Operate a Given Number of Devices (Radio, TV, Record Player, Cassette Player) Total	0	1 or 2	3 or 4	Percent of Persons Saying Speed of Speech on Radio and TV is-- Total	Too Fast	About Right
Single								
Seeing	(2429)	100	2	12	86	100	13	87
Physical	(343)	100	13	21	66	100	8	92
Learning	(485)	100	1	6	93	100	10	90
Multiple								
Seeing & Physical	(1939)	100	7	24	70	100	18	82
Seeing, Physical & Learning	(1190)	100	10	23	67	100	22	78
Seeing & Learning	(648)	100	1	17	82	100	13	87
Physical & Learning	(201)	100	5	19	76	100	20	80
Total	(7321)	100	5	18	78	100	16	84

Although 59% can use all four types of receivers, and 77% can use three out of four (usually excluding cassette players), five percent cannot operate any of these appliances, four percent can use only one type (usually radio), and another 14% can use only two. Only 10% of those who can operate all four receivers are in poor health, but 30% of those who cannot use any are in poor health. Of those who cannot operate any of the receivers, roughly 80% have problems seeing. Overall, 16% feel that the speed of normal speech on radio or television is too fast. Roughly seven out of ten persons who found the speed to be too fast experienced multiple reading limitations.

One implication of these findings is that special radios, record and cassette players must be extremely simple and designed for persons who have a constellation of limitations in strength, dexterity, and vision, if they are to provide genuine alternatives to regular print for persons with print limitations. These appliances should also have the built-in capacity to be slowed down for easy listening as well as speeded up for persons able to comprehend at more rapid rates.

Severity Scale

Another approach employed to simplify the complex findings on reading limitations was to analyze them according to severity without regard to the specific nature of the limitation. The severity rating system assumes that: a) being "unable" to perform an activity is more severe than having "difficulty" performing it; b) each limitation type is of equal severity, hence, an inability of one limitation type is equal to an inability of another limitation type; and similarly, c) difficulties in each limitation type are of the same severity. The category "unable" was possible in each of the areas of: Seeing; Holding and/or Turning; Sitting Up and/or Endurance. In the area of Learning, problems such as perception, memory loss, confusion and attention span were considered "difficulties" since their severity was unknown. Two levels of learning difficulty were coded: a single problem and multiple problems.

For the severity rating system, the following classifications were used:*

1. Minor -- only one difficulty;
2. Moderate -- more than one difficulty and no inabilities;
3. Severe -- only one inability; and
4. Very Severe -- more than one inability plus any number of difficulties.

In this manner, 20% of the target population was classified as having "minor" limitations in reading regular print, 28% as having "moderate" limitations, 19% as having "severe" limitations, and 33% as having "very severe" limitations. (See Table 3-9.) Using this system, almost all (99%) of those classified as "severe" had the single limitation of being unable to see regular print; 74% of those classified as "minor" had the single limitation of having difficulty in seeing regular print.

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*Other possible severity scales were considered. One alternate scale classifies single "difficulties" as Minor; more than one "difficulty" or one learning problem as Moderate; multiple learning problems or any "unables" as Severe; and multiple "unables" as Very Severe. In this version, 17% have Minor problems, 23% have Moderate problems, 23% have Severe, and 27% have Very Severe problems. This classification yields a scale that correlates more highly on the learning variables ($r=0.33$) than the severity scale we chose ($r=0.29$). However, we prefer the scale given above because it puts less weight on assessing the impact of learning difficulties.

Table 3-9

Persons With Limitations in Reading Regular Print According to Overall Level of Severity

			Level of Severity			
Limitation Typology	Weighted Sample Size	Total	Minor	Moderate	Severe	Very Severe
		Percent				
SINGLE						
Seeing	(2429)	100	44	0	56	0
Physical	(343)	100	42	24	5	29
Learning	(485)	100	49	51	0	0
MULTIPLE						
Seeing & Physical	(1939)	100	0	35	0	65
Seeing, Physical & Learning	(1190)	100	0	40	0	60
Seeing & Learning	(648)	100	0	56	0	44
Physical & Learning	(201)	100	0	79	0	21
Total	(7321)	100	20	28	19	33

The classifications were devised strictly in order to present a finer analysis of the data, permitting of more gradations. The terms, as we have defined them, do not have the same meanings they do in ordinary English. Hence, one should not assume, for example, that a person who is designated as having a "minor" limitation in reading regular print does not have a serious reading disability. To the contrary, all persons included in the survey were considered to have serious reading limitations.

COMPOUNDING LIMITATIONS TO ANY KIND OF READING

Over half of our respondents reported multiple reading limitations of different types. In addition to their limitations in reading print: over three-quarters of the respondents had one or more chronic non-reading conditions, hearing loss, problems in auditory cognition (rate of absorbing speech on radio or television), mobility or general health. As many as half of our respondents had two or more additional limitations, and the percentage of persons with multiple impairments increases with age. (See Table 3-10.) We have labelled these additional physical problems as compounding limitations to the reading process, because they may exacerbate the specific limitations identified in using print materials or may restrict reading by touch or by listening, as well as by sight. Examples of the latter type are the loss of fine motor control or tactile sensitivity among some persons with diabetic retinopathy, thus restricting their use of braille, or the loss of hearing that will restrict the use of recordings or being read to by another person. Examples of systemic disorders that may limit reading of any type are progressive debilitating diseases such as cancer.

The variety of chronic non-reading problems that were reported was

Table 3-10

Distribution of Persons with Compounding Restrictions by Type of Print Limitation

	Weighted* Sample Size	MOBILITY						HEARING			HEALTH				NUMBER OF SERIOUS CHRONIC CONDITIONS NOT RELATED TO READING			
		Total Percent	No Difficulty	Some Difficulty	Needs Aid or Person	Stays in House	Stays in Bed	Total Percent	No Difficulty	Hard of Hearing or Deaf	Total Percent	Good	Fair	Poor	Total Percent	None	One Condition	Two or More Conditions
										PERCENT								
SEEING																		
No Difficulty	(1028)	100	66	8	14	6	6	100	87	13	100	69	23	8	100	62	22	15
Difficulty	(2788)	100	62	9	14	12	3	100	73	27	100	52	36	13	100	50	30	20
Unable	(3415)	100	36	9	25	23	7	100	72	28	100	47	35	18	100	48	31	21
HOLDING																		
No Difficulty	(5914)	100	57	9	18	14	2	100	76	25	100	56	32	12	100	54	28	17
Difficulty	(767)	100	22	9	21	34	13	100	65	35	100	36	38	26	100	33	37	27
Unable	(550)	100	10	4	28	30	28	100	72	28	100	32	37	31	100	36	31	31
TURNING																		
No Difficulty	(6100)	100	56	9	18	14	2	100	75	25	100	55	33	12	100	54	29	17
Difficulty	(632)	100	20	10	23	35	13	100	68	32	100	37	37	26	100	34	35	28
Unable	(498)	100	9	5	24	32	30	100	70	30	100	36	34	30	100	34	34	30
SITTING UP																		
No Difficulty	(6351)	100	54	9	19	16	2	100	75	25	100	55	34	12	100	53	29	16
Difficulty	(439)	100	16	11	19	34	20	100	68	32	100	31	32	37	100	33	29	34
Unable	(440)	100	10	5	25	24	36	100	70	30	100	34	32	34	100	33	33	33
WEAKNESS																		
No Difficulty	(3927)	100	61	8	18	12	1	100	79	21	100	62	31	7	100	59	27	13
Difficulty	(695)	100	36	13	19	25	7	100	68	32	100	40	41	19	100	44	32	20
Unable	(2600)	100	36	9	21	23	11	100	69	31	100	41	35	24	100	40	33	27
LEARNING/COMPREHENSION																		
None	(4709)	100	46	10	20	18	6	100	73	27	100	49	36	14	100	51	30	20
Memory + Confusion/ Attention Span	(609)	100	67	3	15	9	6	100	81	19	100	69	20	11	100	59	28	10
Perception +	(1562)	100	52	8	18	18	5	100	73	27	100	52	31	17	100	47	30	20
Mental Retardation and Other	(352)	100	60	6	15	18	1	100	92	6	100	66	27	**	100	53	27	**
TOTAL	(7321)	100	50	9	19	17	5	100	75	25	100	52	33	15	100	50	30	20

*Weighted sample size for the mobility and chronic condition series is slightly (less than 5%) lower than for the hearing series.

extensive. Heart condition (10%), muscular/motor problems (6%), arthritis and rheumatism (6%) and diabetes (3%) were among the most frequently mentioned problems after hearing loss.

Disruptions to normal body processes resulting in lowered vitality and general health may accompany almost all motor, behavioral, chronic or sensory conditions. Strains upon the organism, such as fatigue, sleep disturbances, increased danger or infection and illness, lowered resistance to shock, and the frequent gain or loss of weight, result in stresses that make performance of a job, attendance at school, or care for a family more difficult. Interference and interruptions to normal system functioning (e.g., respiration and excretion) may result in bodily discomfort (pain, nausea, altered sense of smell and taste, skin sensitivity) that similarly reduces the individual's participation in activities of which reading is frequently a part.

The interrelationships between the compounding limitations and the extent and seriousness of the limitations in reading regular print are shown in Table 3-11, and again in Table 3-12. Persons with severe limitations in manual dexterity and endurance tend to be subject to higher levels of mobility restrictions, more serious non-reading conditions and more general health problems than persons with severe visual limitations. Nearly a third of the visually impaired who are unable to read print need to stay in the house or in bed, but the level of confinement is twice as high for those who are unable to hold a book or to turn pages. The implication of this for the NLS is again that program elements and equipment must be designed to accomodate the worst possible cases--that is, persons with multiple reading and compounding limitations. (Some details follow.)

Table 3-11

Distribution of Persons with Mobility, Hearing, Health and Serious Non-Reading Restrictions - by Single and Multiple Reading Limitations

Limitation Typology	Weighted Sample Size	Mobility						Hearing			Health				Number of Serious Chronic Conditions Not Related to Reading Limitations			
		Total	No Difficulty	Some Difficulty	Needs Aid or Person	Stays in House	Stays in Bed	Total	No Difficulty	Hard of Hearing or Deaf	Total	Good	Fair	Poor	Total	None	One Condition	Two or More Conditions
		PERCENT																
Single Limitations																		
Seeing	(2428)	100	58	9	19	13	*	100	77	22	100	57	36	7	100	58	28	13
Learning	(485)	100	92	2	4	2	*	100	94	6	100	86	13	*	100	77	13	10
Physical	(342)	100	20	15	25	24	16	100	79	21	100	54	30	16	100	45	32	17
Multiple Limitations																		
Seeing & Physical	(1939)	100	35	11	21	23	11	100	67	52	100	38	38	23	100	43	31	25
Seeing, Physical & Learning	(1190)	100	34	8	21	28	8	100	68	32	100	41	35	24	100	35	37	25
Seeing & Learning	(646)	100	70	5	18	6	*	100	77	23	100	64	28	8	100	58	27	8
Physical & Learning	(201)	100	59	9	14	14	*	100	85	13	100	65	23	11	100	55	27	8
Total	(7231)	100	49	9	20	18	5	100	74	26	100	52	36	12	100	51	30	19

*Less than 0.5%

Table 3-12

Distribution of Persons With Compounding Limitations in Relation to Print Reading Severity Levels

			Compounding Limitations				
Print Reading Severity Level	Weighted Sample Size*	All	Hard of Hearing	Has to Stay in House or in Bed	Health is Poor	Can Operate Only Two of Record Player, Cassette Player, TV or Radio	Speed of Speech on Radio and TV is too Fast
			Percent of Persons at Severity Level				
Minor	(1445)	20	20	7	5	8	13
Moderate	(2006)	28	26	16	12	18	16
Severe	(1300)	19	25	19	9	18	12
Very Severe	(2400)	33	30	40	26	38	18
Percent With Compounding Limitations	(7151)	100	26	23	15	23	15

* Weighted sample size varies slightly for each of the compounding limitations.

Hearing

Of the compounding factors, hearing loss is singly the most frequent problem, as its incidence is related to the decline in hearing with age. About a quarter (25%) of the respondents are hard of hearing, although only one percent are totally deaf. As seen in Table 3-10, hearing deficits affect persons who have reading limitations in seeing, manual dexterity and endurance about equally. Persons reported to have learning limitations, many of whom were children, are slightly less prone to hearing loss.

Hearing loss appears to be related to the loss of ability to absorb speech: whereas 12% of the group with no hearing loss said that the speed of speech on radio and television was too fast for them, 23% of those who were hard of hearing said that it was too fast. Overall, 15% of the respondents reported such aural cognition problems.

One clear implication of these findings is that many persons may not be able to make maximal use of recorded books and magazines unless they are properly amplified or appropriate hearing aids or headphones are used to compensate for correctable deficits in audition. Additionally, speech and pitch controls are important features for listeners who need to slow down recordings to understand them.

Mobility

Mobility impairments which limit the performance of daily activities and one's ability to physically exert oneself generally also reduce the potential for individuals to participate in recreational or other activities for which informational and recreational reading materials are commonly prepared. It appears that people who are unable to participate in activities take a great deal of pleasure in vicariously experiencing those activities through reading. However, we believe that the ability to engage in activities is more likely to lead to regular reading, and to sustain an interest in further reading. The current deluge of special interest magazines found on any newsstand for bicyclists, photographers, cooks, etc., would seem to support this view. (See Chapter 5 for further details on this issue.)

Our survey findings relating to mobility reveal that about half of the sample population, as seen below, is unable to get about with ease.

Mobility Status	
Has to stay in bed all or most of the time	5%*
Has to stay in the house all or most of the time, but not in bed	17%*
Needs assistance of another person to get about, but does not have to stay in the house	16%*
Needs assistance of a special aid, such as a long cane, walker, wheel chair or seeing eye dog, but does not have to stay in the house	16%
Needs a travel aid and/or person to get about, but does not have to stay in the house	19%*
Has some difficulty in getting about by oneself, but does not use a travel aid or person to help	9%*
Has no difficulty in getting about by oneself.	50%*

Overall, about 25% of the respondents utilize some kinds of travel aids to get about, and of these persons, about 60% also report needing the assistance of another person. It is obvious, then, that for this population, most persons could not readily get to a bookshop or a library independently should they want to. Our findings are consistent with other studies of the disabled which indicate that help in travel is one of their greatest needs.

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*These items were combined in a Guttman Mobility Scale, achieving a coefficient of reproducibility of 0.9676, and a coefficient of scalability of 0.8842.

Health

Half of the sample say that they are in "good health," a third report that their health is only "fair," and one-sixth think that their health is "poor." Only 51% of those confined to their beds say their health is poor, a finding that suggests a serious underestimate of health among the other 49%, according to commonly accepted standards. Also, only 27% of those confined to the house say their health is poor. (Older persons tend to say that their health is poorer than younger persons with the same clinical level of health.)

Correlational Analyses

An additional methodological tool that we employed to analyze the relationship of the disability and health factors was correlational analysis. This provides a shorthand way of measuring the strength of the relationships seen in tabular analysis. Here, every individual who has one limitation is checked to see if he has any others, and a score is calculated representing the association between limitations. The association scores (Pearson pairwise correlation coefficients) range from -1 to +1. To explain: if every individual with one limitation always had another, then there would be a perfect association between limitations, and the correlation would be +1. By contrast, if suffering one limitation precluded the possibility of a second limitation, the association between limitations would also be a perfect 100%, but in a negative sense, and the association score would be -1. If there were no relationship, i.e., half of the time persons with one limitation had a second one, but half of the time they did not, then the association score would be 0.*

Table 3-13 shows the association scores for the limitations: Seeing; Holding/Turning; Sitting/Weakness; Learning; Hearing; Mobility; and General Health. The circled values indicate factors that are correlated at .3 or higher. The highest association (+0.5) is between the Holding/Turning and Sitting/Weakness factors, affirming the legitimacy of combining these into a single physical disability factor. The association between Mobility and Health is somewhat pronounced (+0.3). For Seeing and Learning the association score is (-0.3), with the negation sign meaning that as the severity of the vision problem increases, the number of learning difficulties tends to decline, and vice versa.

The significance of the scores is to emphasize once again the need to promote the activities of the National Library Service, its equipment, its selection and its local library operation, based upon the global, physical needs of individuals with problems in reading print.

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*In order to calculate the association scores, a range of values was given for each limitation--e.g., 0=no problem, 1=problem, 2=serious problem. Then the values for one limitation were correlated with the values of the second limitation. Graphically, the procedure involves attempting to draw straight lines between pairs of points. If all points lie exactly on the line, we say we have a perfect linear relationship (an association of +1 or -1). The range of the values of the variables "Seeing," "General Health" and "Hearing" was 0, 1, 2, comparable to "Unable, Difficulty, Able" or "Poor, Fair, Good" or "Able to Hear, Hard of Hearing, Deaf." Holding/Turning and Sitting/Weakness variables were scored 0, 1, 2, as well, conforming to ((Able, Able), (Able, Difficulty), (Difficulty, Able)); ((Difficulty, Difficulty), (Difficulty, Unable), (Unable, Difficulty)); ((Unable, Unable)). The Learning variable was scored 0, 1, 2, depending on whether there was none, one, or more than one learning limitation. For mobility, a Guttman scale was prepared that reached a coefficient of scalability of 0.88, and a coefficient of reproducibility of 0.97 and minimum marginal reproducibility of 0.72. This was achieved by utilizing the incremental mobility difficulties of: "have no difficulty getting about," "have some difficulty getting about," "need person and/or device for help," "have to stay in house," and "have to stay in bed."

Table 3-13

Pearson Correlation Coefficients Between Limitations

Limitation	Seeing	Holding	Turning	Sitting Up	Weakness	Learning	Hearing	Mobility	Dexterity	Health
Seeing	1.0	-.04	-.04	.09	.07	-.26	.10	.22	-.12	-.15
Holding		1.0	.78	.54	.31	.05	.06	.39	-.36	-.20
Turning			1.0	.54	.29	.04	.05	.38	-.36	-.16
Sitting Up				1.0	.33	.03	.05	.36	-.29	-.18
Weakness					1.0	.06	.11	.29	-.23	-.24
Learning						1.0	-.04	-.08	-.03	.05
Hearing							1.0	.11	-.12	-.17
Mobility								1.0	-.35	-.34
Dexterity									1.0	.20
Health										1.0

SUMMARY

Most persons who have limitations in reading regular print were found to suffer from two or more severe impairments affecting their overall functional capacity. These limiting conditions are among a set of predisposing variables that determine the extent and nature of reading, including the use of print alternatives made available by the NLS Talking Book and Braille Program.

The pattern of multiple impairment found in this study, and previously reported for the general household population of disabled persons in the United States,has significant implications for the NLS. It means that in order for special library programs to be effective the equipment and programmatic elements of the NLS must be developed for a population in which the largest percentage cannot see regular print either very well or at all, often lack the manual dexterity to manipulate records or record player arms and the strength to press the buttons or to turn knobs requiring usual energy requirements, and may not have the capacity to follow directions of a usual complexity, or the attention span and energy to use or absorb reading materials for more than a few minutes duration at any given sitting. In short, the NLS must be geared to a population that has both reading and compounding limitations.

It is possible that the amount and type of reading done by persons with compounding limitations, especially older persons, is limited to that related to the absolute necessities of daily life--i.e., household management, bill paying and correspondence, for which a library service is not helpful. This conjecture seems not only to be borne out by our household survey, but is also substantiated by our research with librarians, health care personnel and rehabilitation staff who dispense special reading services.

To rectify this situation, the special reading services must be designed and organized to compensate not only for the physical problems that directly limit one's ability to read regular print, but also for a set of compounding limitations that could restrict reading in any media other than regular print. Included here are limitations like poor health, loss of hearing, reduced mobility, loss of fine motor control and poor coordination.

The specific meliorations recommended by current and former NLS users are taken up in Chapter 8, where we discuss the respondents' satisfaction with the National Library Service.

CHAPTER 4

DEMOGRAPHIC AND SOCIAL CHARACTERISTICS

This chapter, which is largely descriptive, provides background data necessary for the examination in subsequent chapters of the activities and reading behavior of persons who have physical limitations in reading print. The chapter begins with a brief demographic and social profile of the respondents and then presents some limited findings on their attitudes and concerns.

PREDISPOSING FACTORS

Age

Findings from the national household screenings showed that age is the most powerful predictor of prevalence rates of reading disability (see Chapter 2). With information from the call-back interviews, we show further in Tables 4-1 and 4-2 that the different types of limitations are related to age. Within each limitation typology, with the notable exception of learning limitations, elderly persons (persons 65 years old or over) comprise roughly 50% or more of the limitation group. About half of the persons with learning limitations are under 16 years of age. Persons who have learning problems in addition to other reading limitations also tend to be younger than those with other types of reading limitations. These differences are seen most clearly in Figures 4-1 and 4-2. The preponderance of

Table 4-1

Age, Sex and Race Characteristics by Specific Limitation in Reading Print

Reading Limitation	Weighted Sample Size*	Total	Age Group				Sex		Race	
			6-16 Years	17-44 Years	45-64 Years	65 & over	Male	Female	White	Non-White
		Percent								
Seeing										
No Difficulty	(1028)	100	39	27	20	14	57	43	81	19
Difficulty	(2788)	100	9	15	31	46	36	64	81	19
Unable	(3415)	100	4	13	24	59	39	61	85	15
Holding										
No Difficulty	(5914)	100	12	17	25	47	40	60	83	17
Difficulty	(767)	100	6	11	33	50	39	61	83	17
Unable	(550)	100	6	13	31	49	45	55	85	15
Turning										
No Difficulty	(6100)	100	11	16	25	47	39	61	83	17
Difficulty	(632)	100	7	12	34	47	43	57	83	17
Unable	(498)	100	9	11	26	54	47	53	84	16
Sitting Up										
No Difficulty	(6351)	100	12	16	26	47	40	60	83	17
Difficulty	(439)	100	5	15	33	47	42	58	77	23
Unable	(440)	100	5	13	29	53	45	55	83	17
Weakness										
No Difficulty	(3927)	100	15	18	25	41	41	59	81	19
Difficulty	(695)	100	6	15	29	50	36	64	82	18
Unable	(2609)	100	6	12	27	55	41	59	85	15
Learning										
None	(4709)	100	3	13	30	54	36	64	84	16
Perception +	(1563)	100	17	16	23	44	40	60	78	22
Memory/Confusion/ Attention Span	(609)	100	41	20	17	22	64	36	88	12
Mental Retardation and Other	(351)	100	44	51	6	0	53	47	79	21
Total	(7231)	100	10	16	26	47	40	60	83	17

* For ease in reading, only the base sample sizes for the age group variable are given. In the other cases, the weighted sample sizes may be slightly lower than the base figures given.

Table 4-2

Age, Sex and Race Characteristics by Reading Limitation Typology and by Compounding Limitations in Hearing, Mobility, Health and Serious Non-Reading Conditions

READING LIMITATIONS	Weighted Sample Size**	Total	Age Group - year 6-16	17-44	45-64	65 & over	Sex Male	Female	Race White	Non-White
		Percent								
Single Limitation										
Seeing only	(2427)	100	4	15	29	52	35	65	81	19
Learning only	(485)	100	60	29	7	4	68	32	82	18
Physical only	(342)	100	5	22	44	29	41	59	82	18
Multiple Limitations										
Seeing & Physical	(1939)	100	*	9	28	62	36	64	82	18
Seeing & Physical & Learning	(1190)	100	9	14	27	50	41	59	82	19
Seeing & Learning	(646)	100	24	24	18	34	42	58	82	18
Physical & Learning	(201)	100	44	32	12	11	56	44	77	23
COMPOUNDING LIMITATIONS										
Hearing										
No Difficulty	(5370)	100	13	19	28	40	40	60	83	17
Hard of Hearing or Deaf	(1861)	100	3	7	23	67	40	60	83	17
Mobility										
No Difficulty	(3526)	100	18	19	27	37	44	56	81	19
Some Difficulty	(631)	100	6	10	26	58	32	68	83	17
Needs Assistance of Aid or Person	(1356)	100	6	17	25	52	39	61	88	12
Confined to House	(1242)	100	2	10	24	64	36	64	83	17
Confined to Bed	(375)	100	3	8	38	50	40	60	81	19
Health										
Good	(3743)	100	18	23	20	40	47	53	86	14
Fair	(2395)	100	7	11	24	59	38	62	85	15
Poor	(1039)	100	2	5	37	56	33	67	77	23
Serious Non-Reading Conditions										
None	(3662)	100	16	21	26	37	43	57	82	18
1 Condition	(2132)	100	7	11	24	59	38	62	85	15
2 or More Conditions	(1436)	100	6	10	30	55	36	64	83	17
Total	(7231)	100	6	10	30	55	36	64	83	17

* Less than 0.5%.

** For ease in reading, only the base sample sizes for the age group variable are given. In the other cases, the weighted sample sizes may be slightly lower than the base figures given.

Figure 4-1

Distribution of Persons With Reading Limitations by Limitation Type Within Age Groups

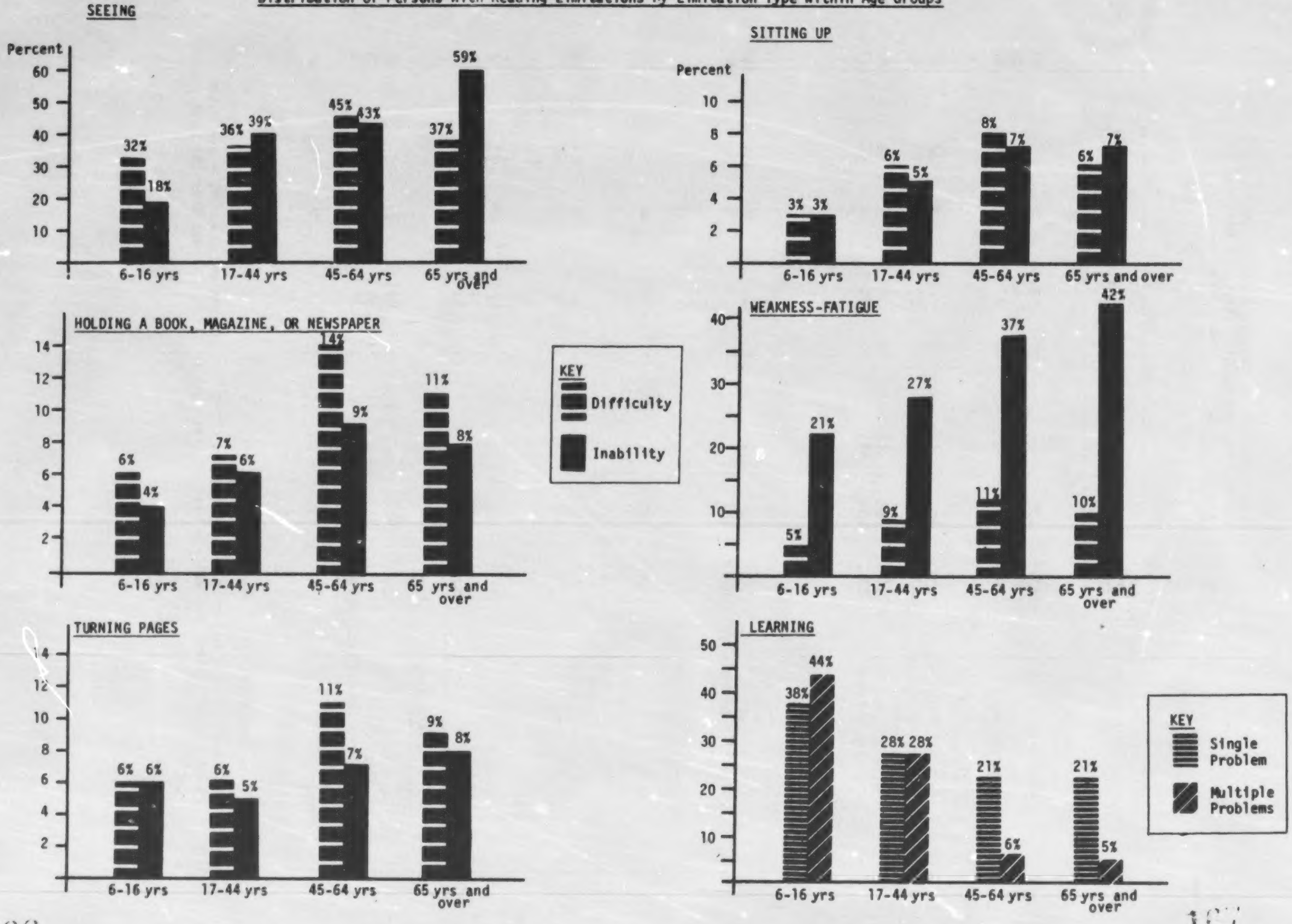
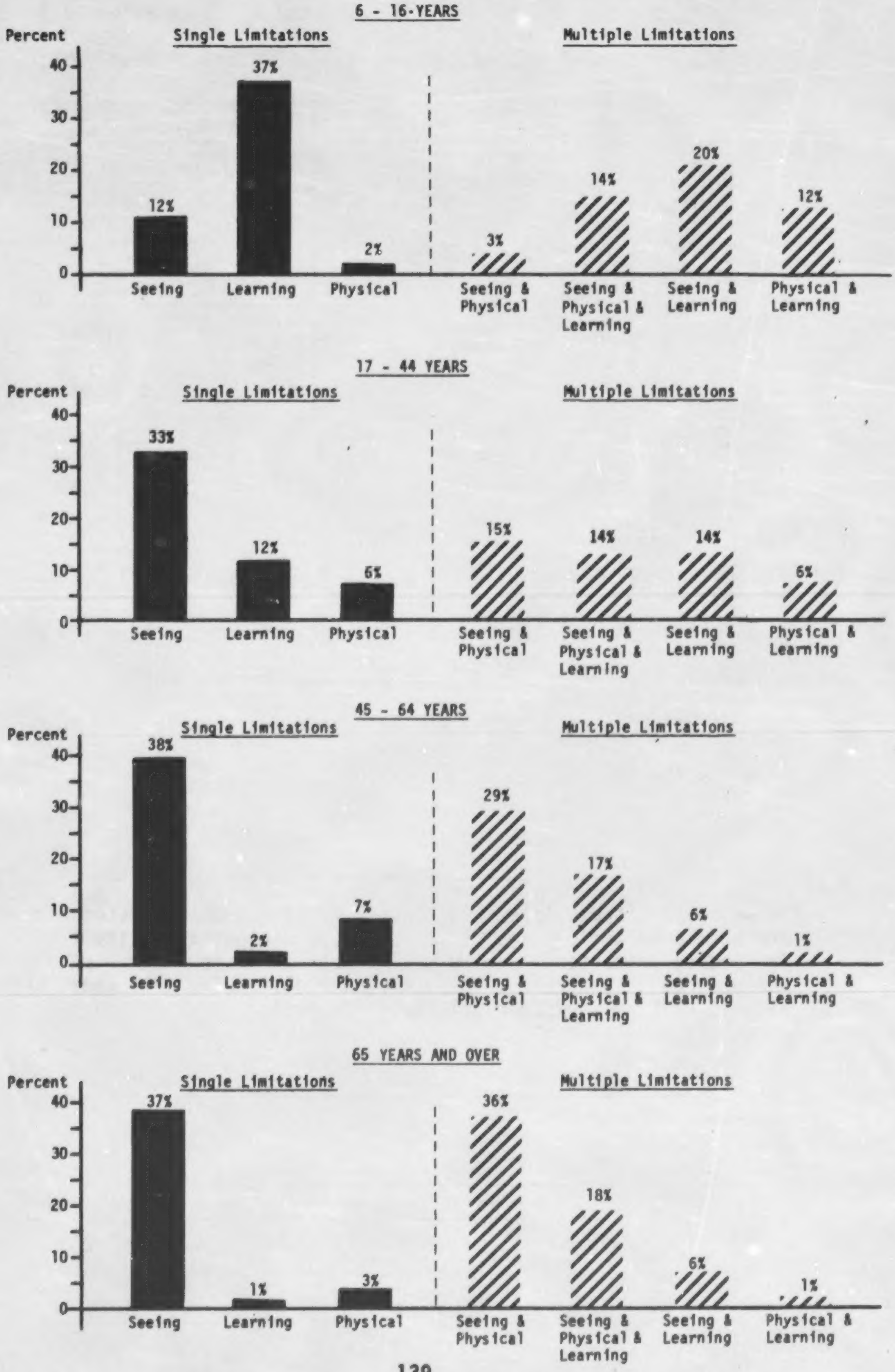


Figure 4-2

Distribution of Reading Limitation Typologies by Age Group



older persons is most pronounced among those "unable" to see regular print. The majority of persons who have physical limitations are in the age group 45-64 years. Figure 4-3 shows that persons whose limitations are most severe are highly concentrated in the ages above 45 years and especially above 65. These results are consistent with findings from the 1977 Health Interview Survey (NCHS, 1977).

Possibly because of the greater severity of limitations with age, persons who are "unable" to hold a book, turn the pages or sit up to read tend to be older than persons who only report having "difficulty" performing these activities. As seen in Figure 4-3, over 80 % of the persons with "severe" and "very severe" reading limitations are above the age of 45 as compared to about 65% of the persons reporting "minor" and "moderate" limitations.*

Hearing disability and problems in general health and mobility are also strongly related to age. Over half of the persons who are hard of hearing, or are in fair or poor health are elderly, and nearly nine out of ten persons (88%) who are confined to their home or bed are above age 44.

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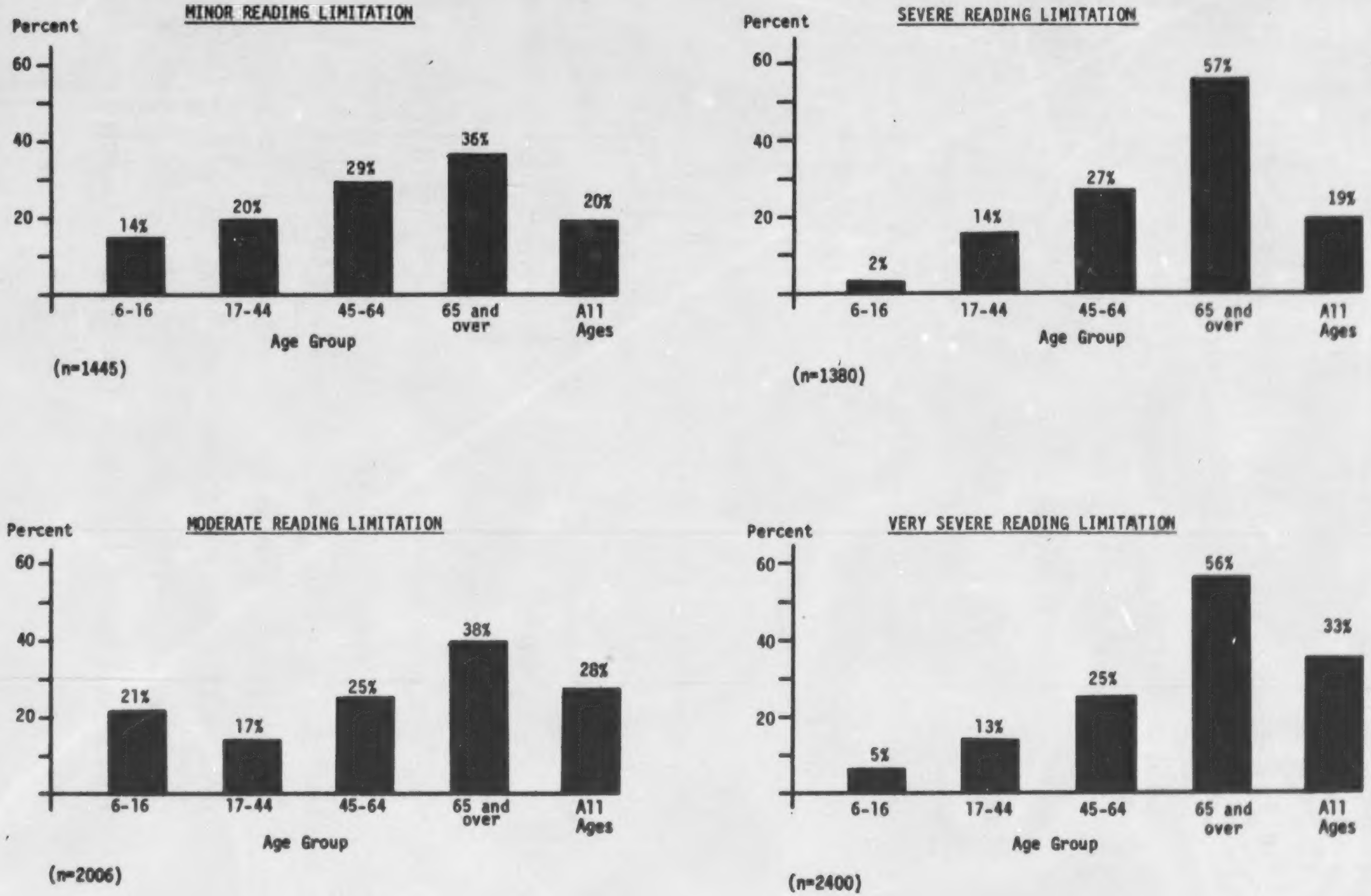
*As we shall discuss later (in Chapter 7), the group of persons who are unable to perform any of the physical manipulations involved in reading print tend, on the whole, both to be more aware of the NLS program than persons who merely have difficulty with them, and also to utilize it more regularly (frequently).

Figure 4-3

Age by Severity of Reading Limitation



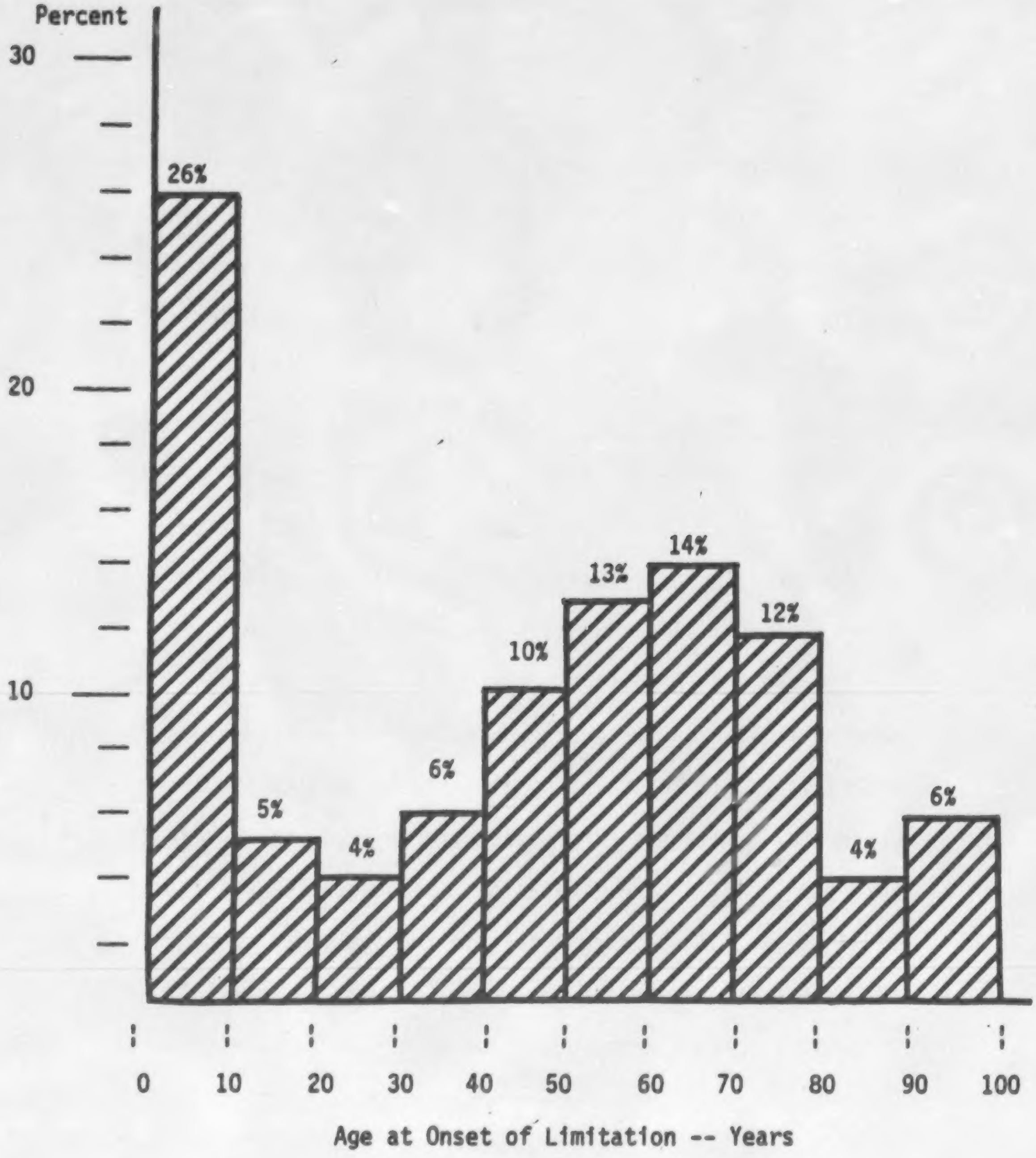
Age at Onset/Rate of Onset--The age of an individual at the onset of his/her reading limitations is important in determining what reading skills and experiences are likely to have been acquired before the difficulties began, and what rehabilitation training has been received subsequently. Our basic findings about age at onset are shown in Figure 4-4.

Approximately 15% of the population had acquired physical impairments affecting their reading ability at birth or in their first year of life, and 20% experienced limitations by the age of ten. A period of slower growth follows: 31% experienced limitations by the age of twenty, 35% by thirty years of age, and 41% by age forty. After the age of 40, the incidence of reading limitations increases more dramatically: 51% had experienced limitations by age fifty, and 64% by age sixty. By the normal retirement age of sixty-five, 71% of the group had experienced reading limitations, 78% by the age of seventy and 90% by age eighty. The average age at onset for most reading disabilities was between the ages of forty and fifty years.

Among the implications of this finding are that the largest portion of the target population (roughly 70%) had probably completed their education before developing any reading limitations. Hence, a pattern of reading and utilizing resources such as bookstores and libraries had probably already been well established. The other side of the coin, however, is that persons who incur reading disabilities in later life sometimes find it especially difficult to learn new coping skills. Half of the population had probably worked at a job for 25 years before suffering difficulties in reading print, and about

Figure 4-4

Distribution of Age at Onset of Reading Limitation



a fourth were of normal retirement age when they first began to experience reading problems.

The data about age at onset have been regrouped and supplemented in three ways, the first showing the stage in life when the reading difficulties began by limitation typology, the second reflecting the rate of onset, and the third showing the length of time since onset in relation to current age. Table 4-3 shows that problems in seeing are among the first limitations of the aging process, but also that for our sample as a whole, physical and learning problems in reading predate seeing limitations. Included in the sample are children with congenital defects who, as they grow older, acquire vision, mobility and hearing restrictions. This table also shows that a gradual onset of reading disabilities is typical, applying to nearly three out of four persons. Persons with physical problems only, however, experience sudden onset in nearly half the cases. Approximately 10% of the reading disabilities identified were due to accidents.

Figure 4-5 shows the proportion of persons who have congenital reading limitations by age group and length of time since onset of the limitation. Not surprisingly, the percentage of persons with congenital limitations decreases with increase in age: in the age group 6-16 years, 46% of the limitations are congenital; in the age group 17-44 years, 43% are congenital; in the age group 45-64 years, 10% are congenital; and in the age group 65 years and over, 3% are congenital. The dramatic decrease in the percentage of persons with

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Table 4-3

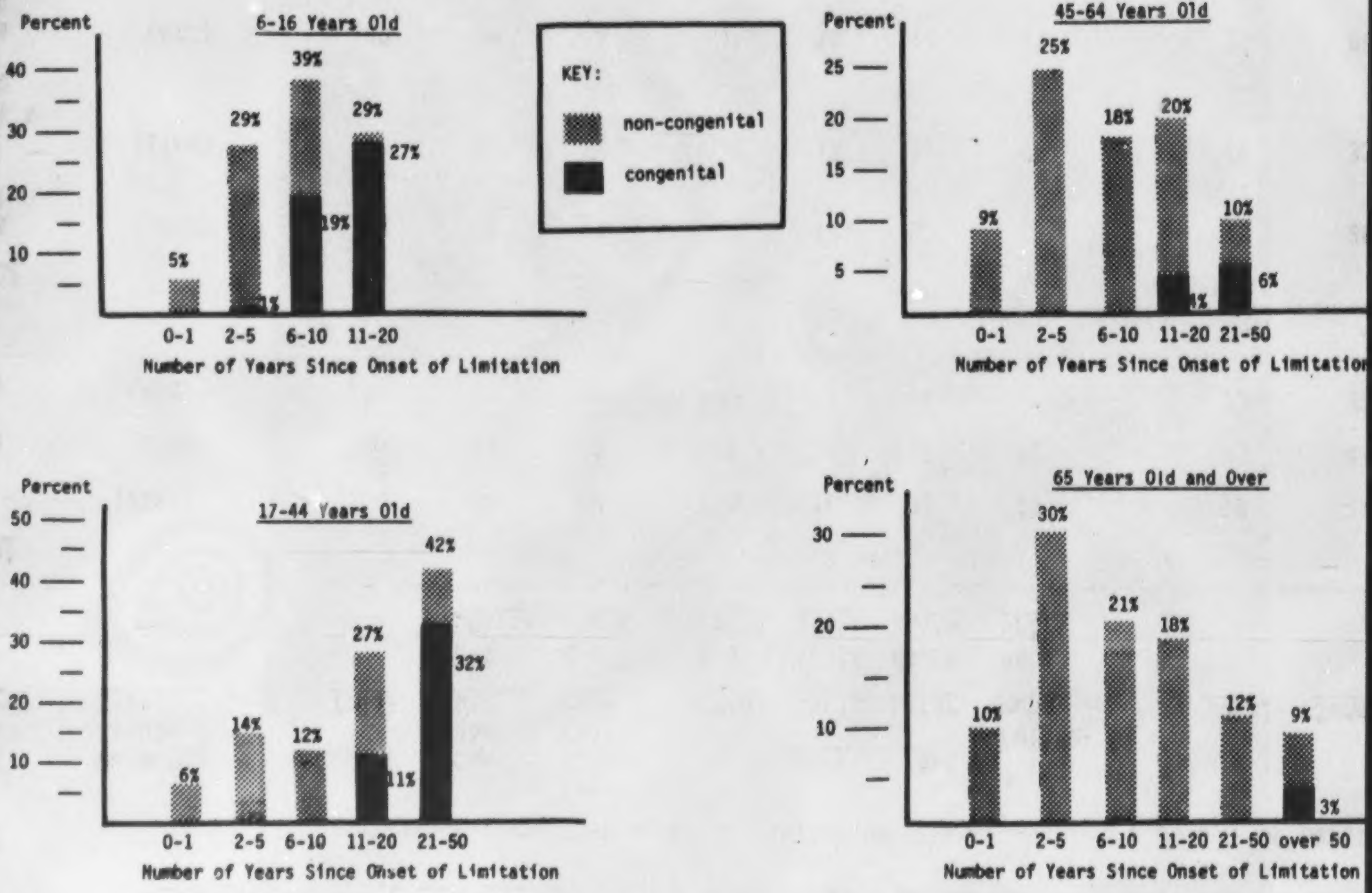
Stage at Which Reading Limitations Began and Rate of Onset by Limitation Typology

		STAGE AT WHICH LIMITATION BEGAN							RATE OF ONSET	
						Working Ages				
Limitation Typology	Weighted Sample Size	Total	Congenital	Pre-School Children	School	Early	Later	Retirement	Gradual	Sudden
			0-1 years	1-5 years	6-16 years	17-44 years	45-64 years	65 + years		
		PERCENT								
Single Limitations										
Seeing	(2291)	100	12	2	9	16	31	29	79	21
Physical	(279)	100	13	3	8	28	37	12	53	47
Learning	(461)	100	40	13	44	*	3	*	73	27
Multiple Limitations										
Seeing & Physical	(1842)	100	8	1	7	15	30	38	75	25
Seeing, Physical & Learning	(1144)	100	16	2	9	17	27	29	67	33
Seeing & Learning	(617)	100	29	6	18	15	14	18	75	25
Physical & Learning	(189)	100	40	14	24	3	11	3	53	47
Total	(6824)	100	16	3	12	15	26	27	74	25

*Less than 0.5%

Figure 4-5

Length of Time with Reading Limitation by Current Age Showing Congenital and Non-Congenital Limitations



congenital reading limitations between the 17-44 year group and the 45-64 year group reflects the marked increase in the incidence of reading limitations associated with the process of aging, noted above.

Although, overall, a relatively small portion of the respondents (20%) suffered reading limitations at birth or during their early school years, their needs may still call for special attention by the National Library Service, since these persons are likely to have been using print alternatives for their entire lives.

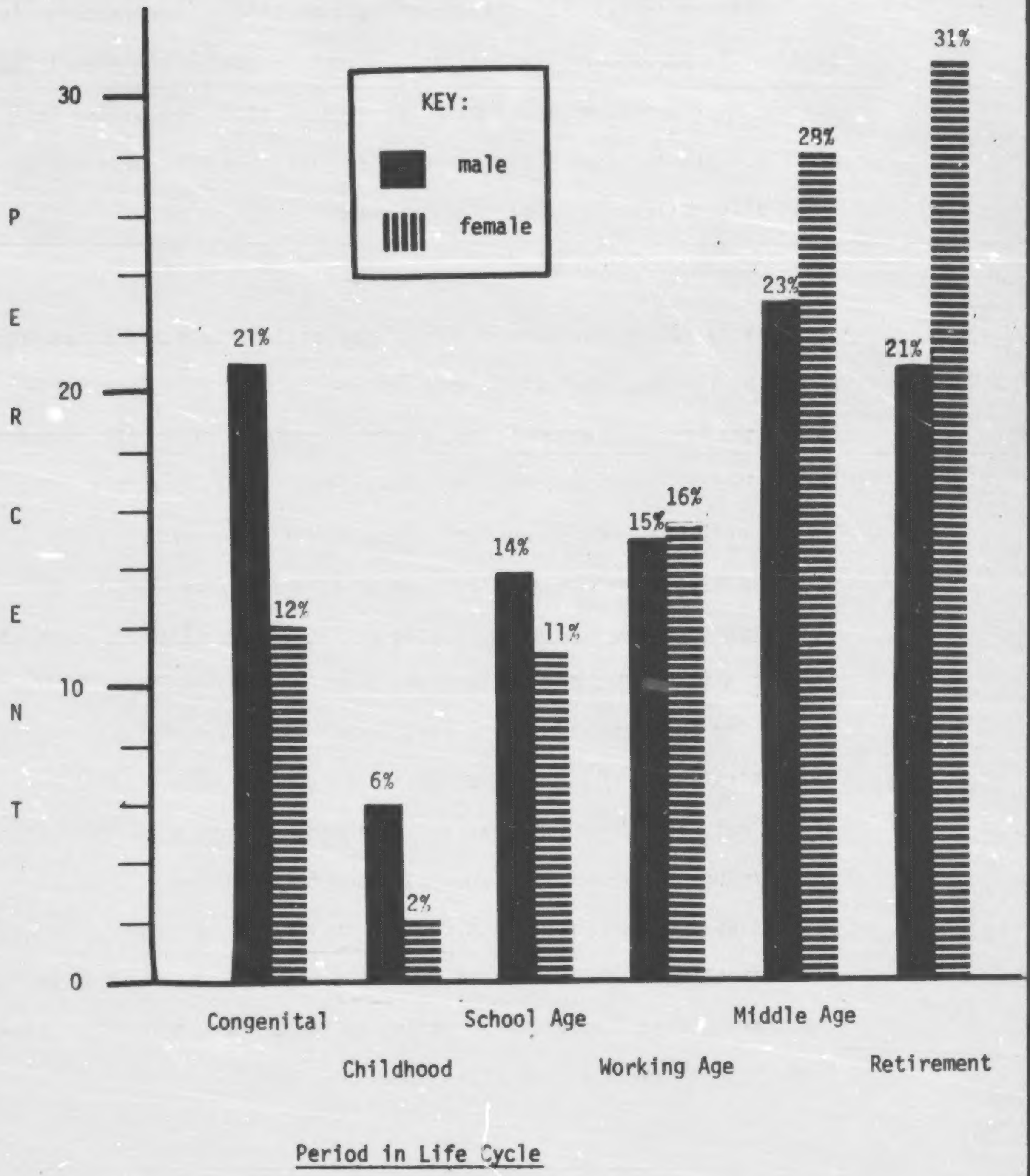
Sex

Nearly 60% of the persons identified in the household screenings as having reading limitations were female. Stated as a "sex ratio" (i.e., the ratio of women to men), this is a ratio of 1.5:1. Although the call-back interviews were not stratified by sex, the "sex ratio" in the call-back sample was very close to the same value. This value is also approximately the same as that found by NCHS in 1977 for persons unable to read newspaper print, and is slightly under the sex ratio (1.85:1) among persons who received supplemental security income for the aged, blind and disabled in 1976 (U.S. Social Security Administration, 1977). The sex ratio for persons with limitations in seeing only is 1.86:1, whereas the ratio for persons with limitations in learning only is of the same magnitude but reversed--1:2.13.

Males are more prone than females to visual and physical impairment affecting reading at birth, in the early childhood and in the school age years. (See Figure 4-6.) Women, by comparison, more often develop their disabilities in later life.

Figure 4-6

Period in Life Cycle at Which Reading Limitation Occurs by Sex



Women were found to report more physical and visual limitations of a relatively low severity level than men. Within each age group, the sex ratios for "difficulty" were also higher than those for "inability." (See Figure 4-7.) These differences are not entirely accounted for by women being in the upper ends of each age group. Hence, this finding suggests that women are more aware of physical problems in reading and report them at an earlier stage of disability than men. (See Chapter 2 for a discussion of this point.)

Although men and women report having mobility restrictions at about the same rates, men seem to be more sanguine about their general health--68% of the men report themselves in good health, 27% in fair health, 12% in poor health; whereas, among women, 46% report themselves in good health, 37% in fair health, and 17% in poor health.* Within each age group, the same patterns tend to hold.

ENABLING FACTORS

Race

There is a slight tendency for non-whites to mention "difficulties" rather than "inabilities" in performing reading tasks--

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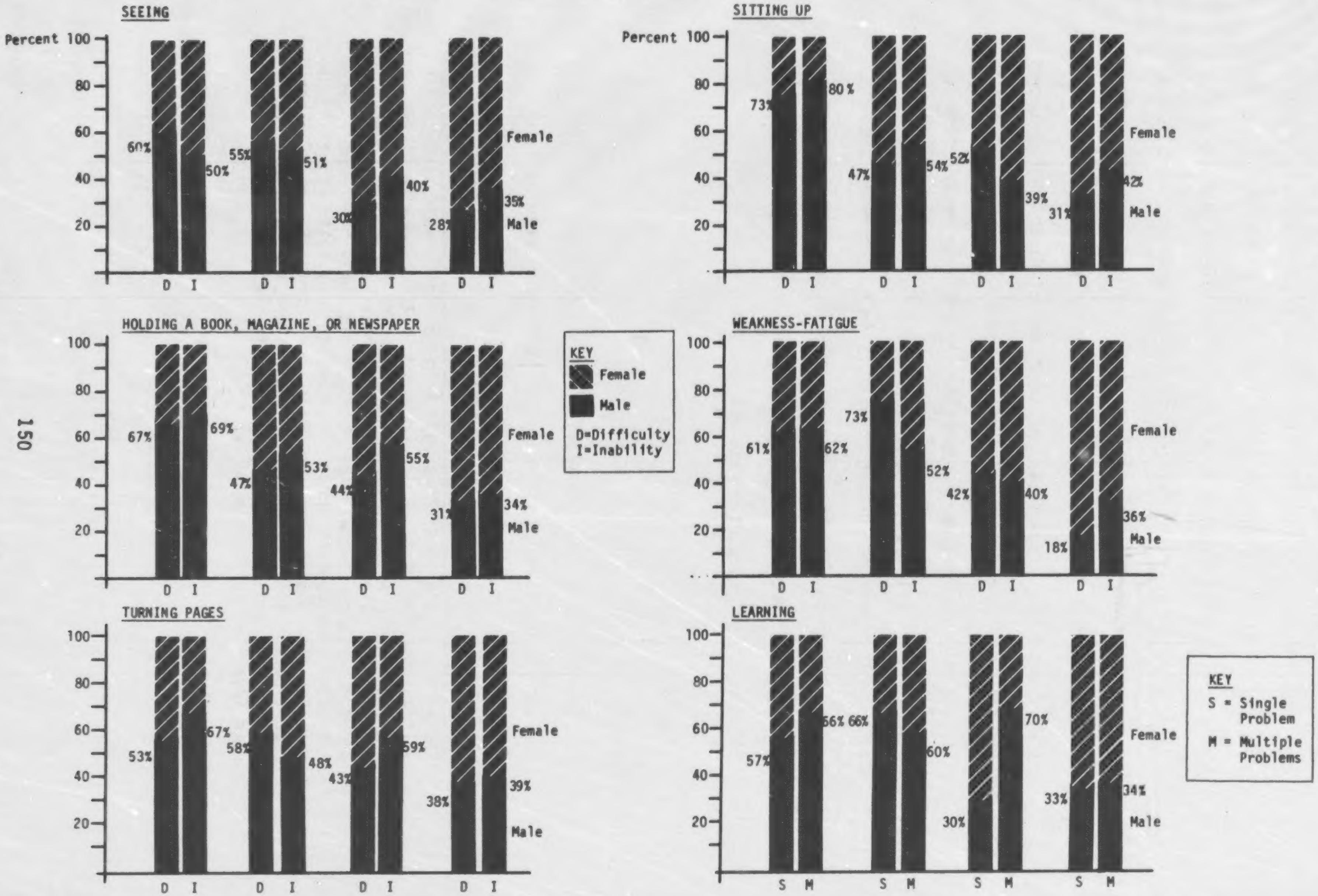
*These results are consistent with other research which shows that self-assessments of health are related to actual health status, and that women tend to feel themselves in poorer health than men. For example, in Fillenbaum's (1979) study of self-assessment of health among the elderly, women consistently said their health was poorer, expressed more concern about their health, and felt that their health interfered more with what they would have wanted to do. Further, women report having a larger number of problems, taking a greater variety of medications, and suffering from more illnesses than do men with the same levels of self-assessed health.

Figure 4-7

Sex of Persons with Limitations in Reading by Age Within Limitation Types



perhaps due to social conditioning to underestimate the severity of their health. On the other hand, whites tend to mention learning disabilities to a higher extent than non-whites; in the age group 16 years and under, 39% of the whites reported learning disabilities compared to 29% for non-whites, perhaps reflecting findings by NCHS (1975) that whites tend to be slightly more aware of and more willing to report selected health problems. The higher rates of awareness, and the earlier identification of disorders on the part of whites may be due to the fact that they receive better health care than non-whites generally.

The life expectancy of whites at birth is about five years higher than that of non-whites. The data bears out this fact and we find that slightly fewer non-whites appear in the age group above 65 years and over, and report age-related vision disorders.

In the age group 6-16, 63% of the reading disabilities of whites are congenital or occur in the first year of life, as compared to 52% for non-whites. In the age group 17-44, 52% of the limitations of whites are congenital or occur before age one, compared to 36% for non-whites; in the age group 45-64; 13% of the limitations of whites are congenital or identified in year one, as compared to 6% for non-whites. These data seem to show that the reading disorders of non-whites are identified later than those of whites: relatively more limitations are identified during the school ages for non-whites than for whites.

Languages Read and Spoken

Over 98% of the respondents said that English was spoken most frequently in their homes. Of the other languages, Spanish was spoken most often. Spanish also followed English as the language most frequently read in the home (3% of all households), followed by French and German (both just under 3%), Italian (1%), and others. These results are somewhat at variance with the data on the usual languages spoken in households across the nation (94% speak English as their first language, for 2% Spanish is their usual language, and for 2% Spanish is the second language in the household). We believe that these differences may be due mainly to slightly lower rates of utilization of telephones (which was our interview technique) by Hispanic and other relatively poor populations.

ORGANIZATIONAL FACTORS

Regional/Metropolitan Variations

Variations in reading limitations across regions are relatively minor (±5%). This is seen in Table 4-4 by comparing the percentages of those reporting "difficulties" and "inabilities" with those reporting "no difficulties." For specific reading limitations due to problems in seeing, holding, turning, sitting-up and mobility, persons living in the Northeast and South mentioned problems slightly more frequently than might have been expected given the population in those regions. (These regional differences are again consistent with the 1977

Table 4-4

Region and Place of Residence by Specific Reading Limitation

Reading Limitation	Weighted Sample Size*	Total	Region				Place of Residence	
			North East	South	North Central	West	Metropolitan Area**	Non-Metropolitan Area***
		Percent						
Seeing								
No Difficulty	(1028)	100	14	35	34	16	72	28
Difficulty	(2788)	100	17	40	29	14	64	36
Unable	(3415)	100	20	39	27	14	68	32
Holding								
No Difficulty	(5914)	100	18	39	28	14	68	32
Difficulty	(767)	100	19	33	32	16	66	33
Unable	(530)	100	23	38	30	9	60	40
Turning								
No Difficulty	(6100)	100	18	39	29	14	68	32
Difficulty	(632)	100	16	34	32	17	65	35
Unable	(498)	100	21	44	24	10	61	39
Sitting Up								
No Difficulty	(6351)	100	18	38	29	14	68	32
Difficulty	(439)	100	15	41	32	13	63	37
Unable	(440)	100	24	45	20	10	61	39
Weakness								
No Difficulty	(3927)	100	20	38	27	15	68	32
Difficulty	(695)	100	16	40	35	9	64	36
Unable	(2609)	100	16	40	30	14	67	33
Learning								
None	(4709)	100	19	38	29	13	68	32
Perception+	(1563)	100	16	40	29	15	64	36
Memory/Confusion/ Attention Span	(609)	100	17	36	30	17	70	30
Mental Retardation & Other	(351)	100	11	45	27	16	69	31
Total	(7231)	100	18	39	29	14	67	33

* For ease in reading, only the base sample sizes for the region variable are given. In the other cases, the weighted sample sizes may be slightly lower than the base figures given.

** Inside Standard Metropolitan Statistical Area (SMSA)

*** Outside Standard Metropolitan Statistical Area findings by NCHS for the "newspaper disabled." The prevalence rate in the South was highest, followed by that in the Northeast.) Reporting of such limitations in the North Central and Western regions was slightly less frequent than might have been expected. But when the full range of limitations is examined as in Table 4-5, or viewed within regions by age and severity as in Table 4-6, or by urbanization as in Table 4-7, there is no discernible pattern of regional differences.

As discussed earlier in regard to the screening substudy, there is a very consistent pattern of variation in reported limitations of all types and severity when one compares non-metropolitan to metropolitan areas. Even after controlling for age and sex differences, the prevalence rates for residents of non-metropolitan areas are significantly higher. Two implications of this finding which were drawn in the discussion of the national screenings (Chapter 2), but which are worth repeating are: 1) that health care or rehabilitation services may be less accessible in non-metropolitan areas; and 2) that life-styles make limitations more pronounced or readily felt in non-metropolitan areas. This suggests that the need for services that provide alternative reading materials to print, and the promotion of such services is relatively higher in the non-metropolitan and rural areas. However, potential need is not equivalent to effective demand because other factors like education, family living arrangements, culture, life style and social roles intervene.

Table 4-5

Region and Place of Residence by Reading Limitation Typology and Compounding Limitations

			Region				Place of Residence	
READING LIMITATIONS	Weighted Sample Size*	Total	North East	South	North Central	West	Metro-politan Area	Non-Metro-politan Area
		Percent						
Single Limitation								
Seeing only	(2427)	100	21	38	27	14	69	31
Learning only	(485)	100	16	35	35	14	66	34
Physical only	(342)	100	13	36	33	17	74	26
Multiple Limitations								
Seeing & Physical	(1939)	100	19	38	31	12	65	35
Seeing & Physical & Learning	(1190)	100	15	44	28	14	62	38
Seeing & Learning	(646)	100	18	39	24	19	65	35
Physical & Learning	(201)	100	11	34	33	22	83	17
COMPOUNDING LIMITATIONS								
Hearing								
No Difficulty	(5370)	100	20	37	30	14	68	32
Hard of Hearing or Deaf	(1861)	100	13	46	27	15	63	37
Mobility								
No Difficulty	(3526)	100	18	39	30	13	66	34
Some Difficulty	(631)	100	16	45	24	15	58	42
Needs Assistance of Aid or Person	(1356)	100	21	34	29	16	71	29
Confined to House	(1242)	100	16	41	29	14	69	31
Confined to Bed	(375)	100	21	43	23	13	74	26
Health								
Good	(3743)	100	21	33	31	15	73	27
Fair	(2395)	100	17	42	28	13	62	38
Poor	(1039)	100	11	54	22	14	60	40
Serious Non-Reading Conditions								
None	(3662)	100	19	37	30	13	69	31
1 Condition	(2132)	100	20	40	26	15	67	33
2 or More Conditions	(1436)	100	14	41	32	13	62	38
Total	(7231)	100	18	39	29	14	67	33

* For ease in reading, only the base sample sizes for the region variable are given. In the other cases, the weighted sample sizes may be slightly lower than the base figures given.

Table 4-6

Classification of Respondents by Severity of Reading Limitations

	--- United States ---				---- North East ----				------ South ------				--- North Central --				------ West --------			
	Age Group				Age Group				Age Group				Age Group				Age Group			
	6-16	17-44	45-64	65 & Over	6-16	17-44	45-64	65 & Over	6-16	17-44	45-64	65 & Over	6-16	17-44	45-64	65 & Over	6-16	17-44	45-64	65 & Over
Severity	Percent				Percent				Percent				Percent				Percent			
Minor	27	26	22	15	24	23	20	19	29	24	24	14	26	32	20	14	25	24	24	16
Moderate	53	29	27	22	57	23	20	14	48	32	28	23	54	29	29	26	55	32	24	22
Severe	4	17	20	23	4	28	21	28	5	15	18	21	4	11	22	22	4	17	19	24
Very Severe	17	28	32	40	16	27	39	39	18	29	30	42	16	28	28	38	15	27	34	38
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Weighted Sample Size	(785)	(1136)	(1899)	(3412)	(178)	(213)	(343)	(574)	(276)	(395)	(799)	(1340)	(235)	(317)	(545)	(996)	(96)	(210)	(212)	(502)

Table 4-7

Reading Limitation by Region and Urbanization

READING LIMITATION	United States		North East		South		North Central		West	
	Metro-politan	Non-Metro-politan	Metro-politan	Non-Metro-politan	Metro-politan	Non-Metro-politan	Metro-politan	Non-Metro-politan	Metro-politan	Non-Metro-politan
	----------	----------	----------	----------	Percent	----------	----------	----------	----------	----------
Seeing										
No Difficulty	15	12	11	11	15	11	19	12	16	20
Difficulty	37	42	34	45	37	44	37	42	40	26
Unable	48	46	54	44	48	45	45	46	44	54
Holding										
No Difficulty	83	80	80	76	86	80	80	81	83	83
Difficulty	11	11	11	11	8	11	13	10	12	14
Unable	7	9	9	12	6	10	7	10	5	3
Turning										
No Difficulty	85	82	84	82	87	81	85	84	85	84
Difficulty	9	9	8	8	7	9	10	10	10	14
Unable	6	8	8	10	6	10	5	7	6	2
Sitting Up										
No Difficulty	89	86	87	88	88	85	91	86	89	92
Difficulty	6	7	5	5	5	8	7	6	6	4
Unable	6	7	9	6	6	8	3	8	5	3
Weakness										
No Difficulty	55	53	61	55	55	51	50	55	57	60
Difficulty	9	11	9	4	8	12	12	11	5	8
Unable	36	36	30	41	37	37	38	35	38	32
Learning										
No Difficulty	66	63	71	65	66	62	66	64	60	66
Perception +	21	24	19	20	20	26	22	21	24	21
Memory/Confusion/ Attention Span	9	8	8	9	9	6	8	10	11	8
Mental Retardation and Other	5	6	3	6	6	6	4	4	6	6
Single Limitation										
Seeing only	35	31	40	35	35	31	32	29	32	33
Learning only	7	7	6	7	6	6	8	8	6	9
Physical only	5	4	3	4	5	3	7	3	5	8
Multiple Limitations										
Seeing and Physical	26	29	28	26	26	27	27	32	22	25
Seeing and Physical and Learning	15	19	12	21	15	22	17	14	17	13
Seeing and Learning	9	10	9	7	9	8	5	13	13	9
Physical and Learning	3	2	2	*	3	2	4	1	5	4
Total	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)
Weighted Sample Size	(4506)	(2190)	(1024)	(203)	(1388)	(1146)	(1337)	(638)	(757)	(203)

ENABLING FACTORS

Living Arrangements

In order to assess the potential utilization of library services providing reading alternatives, it is important to know the living arrangements of persons with reading limitations. Our premise is that the presence of non-disabled household members who are available and willing to assist in the performance of any of the eight components of reading (motivation, awareness, selection, accessibility, operation/control, endurance, comprehension, and utilization/sharing) will lead to an increase in the time spent reading. However, a knowledge of the living situations of such persons, though necessary for an adequate assessment, is not sufficient in and of itself. Even in cases where members of the family are present, one cannot presume that the family facilitates reading. Family leisure habits may not support reading or other household members may opt to opt to read regular print to the persons with print limitations rather than help to provide print alternatives.

Thus, in addition to knowing the living arrangement of persons with print limitations, it is also necessary to know something about the predispositions of the other family members toward reading and toward the print limited persons' independence, ability, and finally about how much they are willing to assist in reading. Although there is much room for variation here, the range of variation can be narrowed by looking at the living arrangements of these persons.

The family constitutes a basic social unit for most Americans. But for many older persons who have outlived their spouses and whose children have moved away, both the nuclear and the extended family appears to have broken down. Twenty-one percent of the respondents were living alone, of whom nearly 83% were female. In 1976, 20% of all households in the United States contained only one person, and 64% of them were female. (U.S. Department of Commerce, 1978, p. 50.) The higher proportion of older persons living alone in our sample (32% over the age of 64, compared to 16% in the age bracket of 45 to 64 years, and 8% between 17 to 44 years) also follows the pattern for the United States population as a whole: 28% of the persons 65 or over are living alone.* See Table 4-8 and Figure 4-8.

In our sample, there is not much regional variation (±4%) in living arrangements. Inside the urbanized areas (SMSAs),** about 20% more people are living alone in the central cities, compared to the non-central cities. Outside the urbanized areas, 25% more persons are living alone in small cities as compared to rural communities. These findings, again, are consistent with national statistics (Soldo, 1978).

A slightly higher proportion of persons with vision loss (24-28% depending on additional limitations) live alone, than persons who have inabilities in manual dexterity (5-8%) and sitting-up (12%). And slightly higher proportions of persons in poor health (25%) or fair health (23%) live alone than those in good health (18%). (See Table 4-9). The relative lack of psychological well-being and security resulting from the situation of living alone may be reflected in the reporting of poorer health by persons living alone, as suggested

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*It is not possible to tell with our data whether persons who live alone are more or less prone to report reading limitations more frequently. As seen in Chapter 2, the population with print limitations is older than the U.S. population at large.

**Standard Metropolitan Statistical Areas.

Table 4-8

Living Arrangement by Age

Living Arrangement	All Ages	6-16	17-44	45-64	65 and over
	Percent				
Alone	21	0	8	16	32
Parents only	16	79	39	3	*
Spouse only	32	1	19	50	33
Children only	12	*	3	6	20
Spouse & Children	8	1	17	16	3
Mixed	10	19	11	7	10
Friends	2	*	3	2	1
Total	100	100	100	100	100
Weighted Sample Size	(7054)	(776)	(1093)	(1873)	(3312)

* Less than 0.5%

Figure 4-8

Living Situation by Age

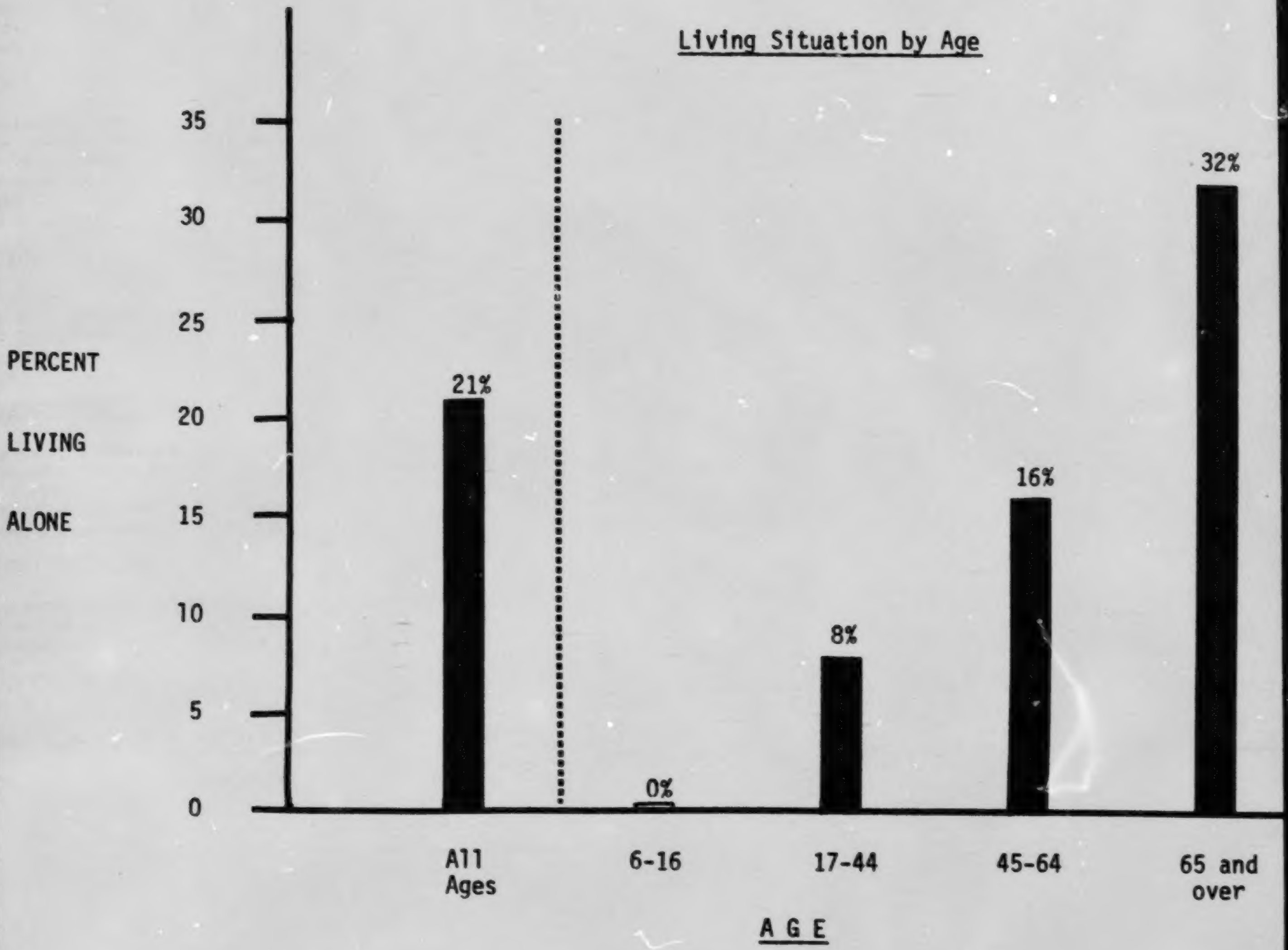

Table 4-9

Living Situation by Reading Limitation Typology and Compounding Limitations

READING LIMITATIONS	Weighted Sample Size	Living Situation							
		Total	Alone	With Parents Only	With Spouse Only	With Children Only	With Spouse & Children	Mixed	With Friends Only
		Percent							
Single Limitation									
Seeing only	(2357)	100	26	8	35	11	8	10	2
Learning only	(465)	100	3	69	7	1	5	14	*
Physical only	(342)	100	12	17	34	9	12	11	5
Multiple Limitations									
Seeing & Physical	(1899)	100	24	3	35	17	10	9	2
Seeing & Physical & Learning	(1160)	100	22	16	32	12	6	9	2
Seeing & Learning	(644)	100	11	29	32	6	6	15	1
Physical & Learning	(187)	100	9	57	14	4	7	9	1
COMPOUNDING LIMITATIONS									
Hearing									
No Difficulty	(5233)	100	20	19	31	9	9	10	2
Hard of Hearing or Deaf	(1820)	100	23	5	34	19	6	11	*
Mobility									
No Difficulty	(3495)	100	20	22	31	6	9	10	1
Some Difficulty	(625)	100	31	8	29	15	6	10	0
Needs Assistance of Aid or Person	(1318)	100	20	12	31	14	9	11	2
Confined to House	(1192)	100	22	8	34	19	4	10	3
Confined to Bed	(361)	100	7	9	37	28	12	7	0
Health									
Good	(3639)	100	18	24	29	9	8	10	2
Fair	(2332)	100	23	8	36	14	7	11	*
Poor	(1030)	100	25	4	35	16	10	9	*
Serious Non-Reading Conditions									
None	(3579)	100	19	22	31	6	9	10	2
1 Condition	(2086)	100	22	10	35	15	7	10	1
2 or More Conditions	(1389)	100	27	12	32	17	*	11	*

* Less than 0.5%

by Gove (1979). Persons who live alone are also slightly more likely to report serious chronic conditions, and more serious mobility limitations and hearing deficits.

Overall, the proportions of persons living in different situations vary little by disability type, except for those with learning problems, most of whom are children; from half to three-fourths of the respondents with learning problems live with their parents. These data are shown in Table 4-10. About one-third of the respondents live with their spouses only; about one-tenth live only with their children; one-tenth live with their children and spouses; and one-tenth live with their parents. There are no significant differences in this distribution according to respondents' race, region or metropolitan area.

Residence Type

There is no clear evidence that the respondents, as a group, are making any special accommodations for the severity of their reading, health or mobility limitations in their choice of a place of residence. Eighty-one percent of the respondents live in private homes, ten percent live in walk-up apartments, five percent live in elevator-operated apartments, three percent live in mobile homes, and one percent live in some other type of residence. As was expected, apartment living is slightly more common in the more urbanized northeastern and midwestern states than in southern and western states.

Table 4-10

Living Situation by Reading Limitation

Reading Limitation	Weighted Sample Size	Total	Living Situation						
			Alone	With Parents Only	With Spouse Only	With Children Only	With Spouse & Children	Mixed	With Friends Only
		Percent							
Seeing									
No Difficulty	(1080)	100	9	47	19	4	7	12	3
Difficulty	(2664)	100	23	12	35	10	9	10	*
Unable	(3309)	100	23	8	34	15	8	10	2
Holding									
No Difficulty	(5796)	100	22	17	31	10	8	10	1
Difficulty	(720)	100	19	10	34	14	8	11	4
Unable	(538)	100	5	14	41	21	9	9	*
Turning									
No Difficulty	(5794)	100	22	16	31	11	8	11	2
Difficulty	(594)	100	19	13	36	12	8	10	*
Unable	(486)	100	8	14	38	21	10	7	*
Sitting Up									
No Difficulty	(6211)	100	22	16	31	10	8	10	2
Difficulty	(416)	100	10	11	41	16	*	12	*
Unable	(427)	100	12	12	33	23	9	10	*
Weakness									
No Difficulty	(3831)	100	20	20	31	9	7	11	2
Difficulty	(662)	100	19	12	41	10	7	10	*
Unable	(2559)	100	22	11	31	16	10	9	2
Learning									
None	(4598)	100	24	7	35	14	9	10	2
Perception +	(1554)	100	20	20	31	9	6	12	2
Memory/Confusion/ Attention Span +	(590)	100	7	45	21	7	9	11	*
Mental Retardation and Other	(313)	100	0	85	*	0	*	12	*
Total	(7054)	100	21	16	32	12	8	10	2

* less than 0.5%

Although the literature on housing for disabled persons is expanding rapidly (Green, 1975; Larsson, 1972), relatively little of the information pertains to whether persons with disabilities manage better without special accomodations in private homes or apartments. The materials available do not suggest any such site or design preferences. Individual life-style and choice seem more relevant. Within these constraints, appropriate attention needs to be given to factors of lighting, circulation, surfaces, amenities, and acoustical control. Obviously, facilities that are not convenient for residents to enter and exit by will inhibit participation in activities outside the home. Inadequate task-oriented lighting and cramped living spaces will restrict reading and storing reading materials. Apartment houses, which tend to have smaller mail boxes than private homes, may limit the accessibility to some of the print alternatives, like records and braille, provided by the NLS, since apartment residents may more often need to go to the post office to collect these materials.

Geographic Mobility

Persons with reading limitations, by and large, move less often than the population at large: 61% have not changed their address in the last five years (1972-1977), and 22% have moved only once. Nine percent have moved twice and eight percent have moved three or more times. The proportion of non-movers in the national population was 52% for the period 1970-1975. (U.S. Department of Commerce, 1978, p. 39.) Older persons who have reading limitations tend to move even less often, as is the case in the general population. See Table 4-11.

The geographical mobility of persons with reading limitations closely parallels the age distributions of such persons across the country. Only in the West are the rates of geographic mobility for persons with reading disabilities much greater than the national averages for all persons with such limitations. This is also the case in the general population, reflecting the younger population composition in the West.* In the West, people move more often: 30% have changed their address once in the past five years, 12% have moved twice and 16% have moved more than twice. On the surface, it appears that it should be relatively unproblematic, therefore, for the NLS, which relies on the postal system to deliver materials to subscribers, to keep track of readers, with the exception of those residing in the West. However, the relocation of persons who previously lived alone and have since either moved to health care residences, in with family, have died or have either begun to use or stopped using the program, undoubtedly creates serious problems for librarians in keeping up to date on changes of address or status. Additionally, we have found that the target population is not terribly responsive to their mail, and a good many of them are unable to use a telephone independently, making communication with this group somewhat difficult. This suggests that unless readers themselves or other household members take the initiative to report changes of residence, regional and subregional librarians may have considerable difficulty keeping track of readers.

As we shall show in Chapter 7, current NLS users are more concentrated in the working ages 17-64 than the target population as a whole and consequently may be expected to be more mobile.

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*National data for all persons reflect movement within the region rather than in and out migration.

Table 4-11

Geographic Mobility by Age and Region

Age Group	Weighted Sample Size	All	Number of Times Changed Address in the Past Five Years			
			0	1	2	3 or more
		Percent				
Under 14	(776)	100	51	23	15	12
14-44	(1093)	100	50	23	10	18
45-64	(1873)	100	64	19	11	6
65 and over	(3312)	100	67	23	6	4
All Ages	(7054)	100	61	22	9	8
Region						
North East [Entire population of North East]	(1309)	100	66 [60]*	17	10	7
South [Entire population of South]	(2788)	100	62 [48]*	22	9	7
North Central [Entire population of North Central]	(2092)	100	66 [55]*	21	7	6
West [Entire population of West]	(1020)	100	42 [42]*	30	12	16
All [Entire population of United States]	(7209)	100	61	22	9	8

*U.S. Bureau of the Census, Current Population Reports, Series P-20, Nos. 285 and 305.

Social Role

An individual's usual activity or major social role is another extremely important variable in assessing his or her potential reading behavior, as has already been suggested in our interpretation of demographic patterns. To illustrate, children in school and adults at college clearly need to spend a good deal of time reading. Many employed persons must read on their jobs and may choose to do so on their way to and from work. Older persons and unemployed persons, who have more free time than students or working adults, often spend some of their leisure hours reading fiction and non-fiction reminiscent of their lifelong experiences and interests, or set in a wide range of historic periods. Social role is also important in projecting the relative priority that should be given to coordinating library/reading services with social and educational agencies.

The survey ascertained some of the social functions of reading, in the context of the respondents' actual roles, and their aspirations for entering new roles, or for improving their functioning in present ones. No systematic information was obtained, however, about imminent undesired role changes that may affect reading--e.g., changes from a working to a non-working status as a result of deteriorating physical conditions. Such changes probably are most salient for those persons 65 years or older who have typically retired and may experience new social, economic and health problems, or even the loss of friends and close family through relocation or death.

The survey findings on the respondents' usual social roles show that 40% are retired, either by choice or on account of their age or disability; 18% are not working for reasons of health or disability;

18% are going to school or are in training; 12% are working; and 3% are looking for work; the usual social role of 9% of the respondents is taking care of their homes. These data are shown by age in Figure 4-9.

Of course, most adults have more than one social role: they work and take care of a home (housekeeping), they are looking for work and going to school, etc. The possibility of multiple social roles makes it somewhat difficult simply to categorize individuals by usual social role, for in many cases it is not clear which role is primary. Another factor that complicates this way of categorizing people is the way in which answers to the question of usual role were given. For example, some people who were retired said that they were taking care of a home and some did not. Should both individuals be categorized as retired, or one as retired and the other as taking care of a home? Our choice in this case was to designate the usual social role of one of the individuals as retired and of the other as taking care of a home. This choice was based on age and sex data, since these characteristics are primary determinants of usual social roles: younger persons typically go to school, elderly persons are retired, women more often take care of homes than do men, men participate in the labor force more often than women. (See Table 4-12.)

For policy purposes though, consistent patterns of variation in the respondents' social roles associated with the types of reading limitations, if found, could be important guides to the kinds of reading materials which would be most useful and how to reach new subscribers.

Figure 4-9

Usual Life Role by Age Group

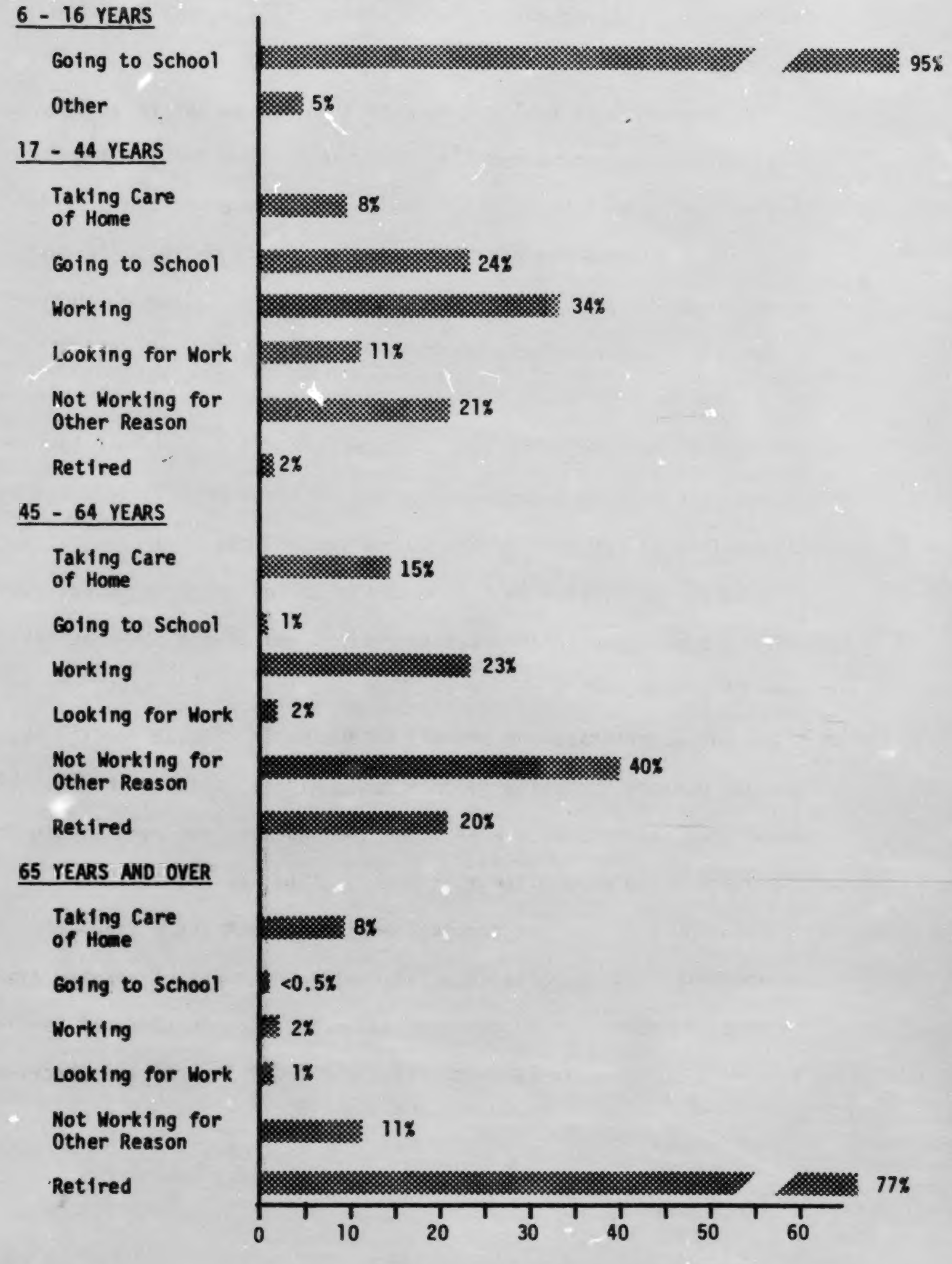


Table 4-12

Usual Social Role by Age and Sex

Usual Social Role	-- 6-16 Years --			-- 17-44 Years --			-- 45-46 Years --			-- 65 & Over --			--- Total ---		
	All	Male	Fe-Male	All	Male	Fe-Male	All	Male	Fe-Male	All	Male	Fe-Male	All	Male	Fe-Male
	Percent														
Taking Care of Home	*	*	*	8	1	17	15	2	23	8	3	11	9	2	13
Going to School	95	95	95	24	24	24	1	2	*	*	*	*	18	22	15
Working	3	4	2	34	41	25	23	30	18	2	5	1	12	19	8
Looking for Work	*	*	1	11	13	8	2	1	2	1	*	1	3	3	2
Not Working for Other Reason	2	2	3	21	20	22	40	50	35	11	13	10	18	21	17
Retired	*	*	*	2	*	4	20	16	22	77	80	76	40	34	44
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Weighted Sample Size	(783)	(490)	(293)	(1130)	(619)	(511)	(1886)	(693)	(1193)	(3364)	(1070)	(2292)	(7239)	(2826)	(4413)

* Less than 0.5%.

For such considerations, the full range of social roles, although somewhat redundant, is more accurate and useful than usual social role. Table 4-13, for example, shows that most persons with solely learning problems (78%) are going to school or are in training, whereas most persons with only vision problems are retired for reasons of age, and most people with only physical problems are not working because of their health or a disability. Persons with physical problems as well as vision and/or learning problems tend to take care of homes less frequently than others. For example, 60% of those with only seeing limitations are taking care of homes, compared to 53% of those with both seeing and physical limitations, and 43% of those with seeing, physical and learning limitations. More significantly though, we see in Table 4-14 that more severe limitations (inabilities as compared to difficulties) are associated with reduced rates of taking care of a home or going to school or working. This implies reduced rates of reading for such roles. (See Figure 4-10 for data about persons with visual problems.)

Mobility restrictions and general health, more than the specific types of reading limitations, seem to be important correlates of social role after controlling for age and sex. Figure 4-11 shows that work and school activity decline with increasing mobility restrictions for all persons. A similar pattern exists for general health, and the pattern persists when the data are examined for individual age groups.

Table 4-13

Full Range of Social Roles by Reading Limitation Typology and Compounding Limitations

READING LIMITATION	Weighted Sample Size	Social Role**					
		Taking Care of Home	Going to School	Retired	Working	Looking for Work	Not Working f Other Reason
		Percent					
Single Limitation							
Seeing only	(2008)	60	11	55	20	6	29
Learning only	(326)	20	78	5	21	9	22
Physical only	(278)	42	15	43	12	*	56
Multiple Limitations							
Seeing & Physical	(1596)	53	4	61	12	2	40
Seeing & Physical & Learning	(977)	43	16	50	12	4	47
Seeing & Learning	(527)	45	37	32	27	5	27
Physical & Learning	(158)	20	61	11	14	9	43
COMPOUNDING LIMITATIONS							
Hearing							
No Difficulty	(4350)	51	3	42	70	5	37
Hard of Hearing or Deaf	(1520)	48	6	69	8	*	34
Mobility							
No Difficulty	(2858)	57	28	42	27	6	26
Some Difficulty	(532)	60	15	54	9	5	40
Needs Assistance of Aid or Person	(1101)	44	15	52	11	4	41
Confined to House	(1008)	35	6	63	*	*	48
Confined to Bed	(310)	29	*	51	*	*	62
Health							
Good	(3009)	49	31	42	24	7	27
Fair	(2025)	55	8	58	10	3	41
Poor	(806)	41	*	56	4	*	56
Serious Non-Reading Condition							
None	(2953)	53	28	40	24	7	31
1 Problem	(1747)	47	12	61	10	3	38
2 or More Problems	(5810)	48	9	55	7	*	47

* Less than 0.5%

** Multiple roles accepted; consequently totals by limitation add to more than 100%.

Table 4-14

Full Range of Social Roles by Reading Limitation

Reading Limitation	Weighted Sample Size	Social Role**: Taking Care of Home	Going to School	Retired	Working	Looking for Work	Not Working for Other Reason
Seeing							
No Difficulty	(901)	28	55	21	16	7	39
Difficulty	(2336)	59	16	48	24	5	32
Unable	(2772)	48	10	58	11	4	39
Hearing							
No Difficulty	(4808)	53	21	49	19	5	32
Difficulty	(608)	42	12	54	7	*	52
Unable	(455)	30	9	48	4	*	58
Turning							
No Difficulty	(4959)	53	21	50	19	5	32
Difficulty	(508)	35	13	49	4	*	55
Unable	(404)	27	12	49	*	*	60
Sitting Up							
No Difficulty	(5161)	52	21	49	19	5	33
Difficulty	(358)	38	9	51	6	*	55
Unable	(351)	32	9	55	*	*	60
Weakness							
No Difficulty	(3157)	53	26	45	21	6	30
Difficulty	(569)	51	11	51	18	*	37
Unable	(2143)	45	13	55	10	4	45
Learning							
None	(3883)	56	8	57	16	4	35
Perception +	(1262)	46	24	45	17	5	37
Memory/Confusion/ Attention Span +	(462)	31	55	21	23	9	36
Mental Retardation and Other	(263)	*	75	*	14	*	42
All	(5871)	50	19	50	17	5	36

* Less than 0.5%

** Multiple roles accepted; consequently totals by limitation add to more than 100%.

Figure 4-10

Severity of Visual Limitations by Life Role

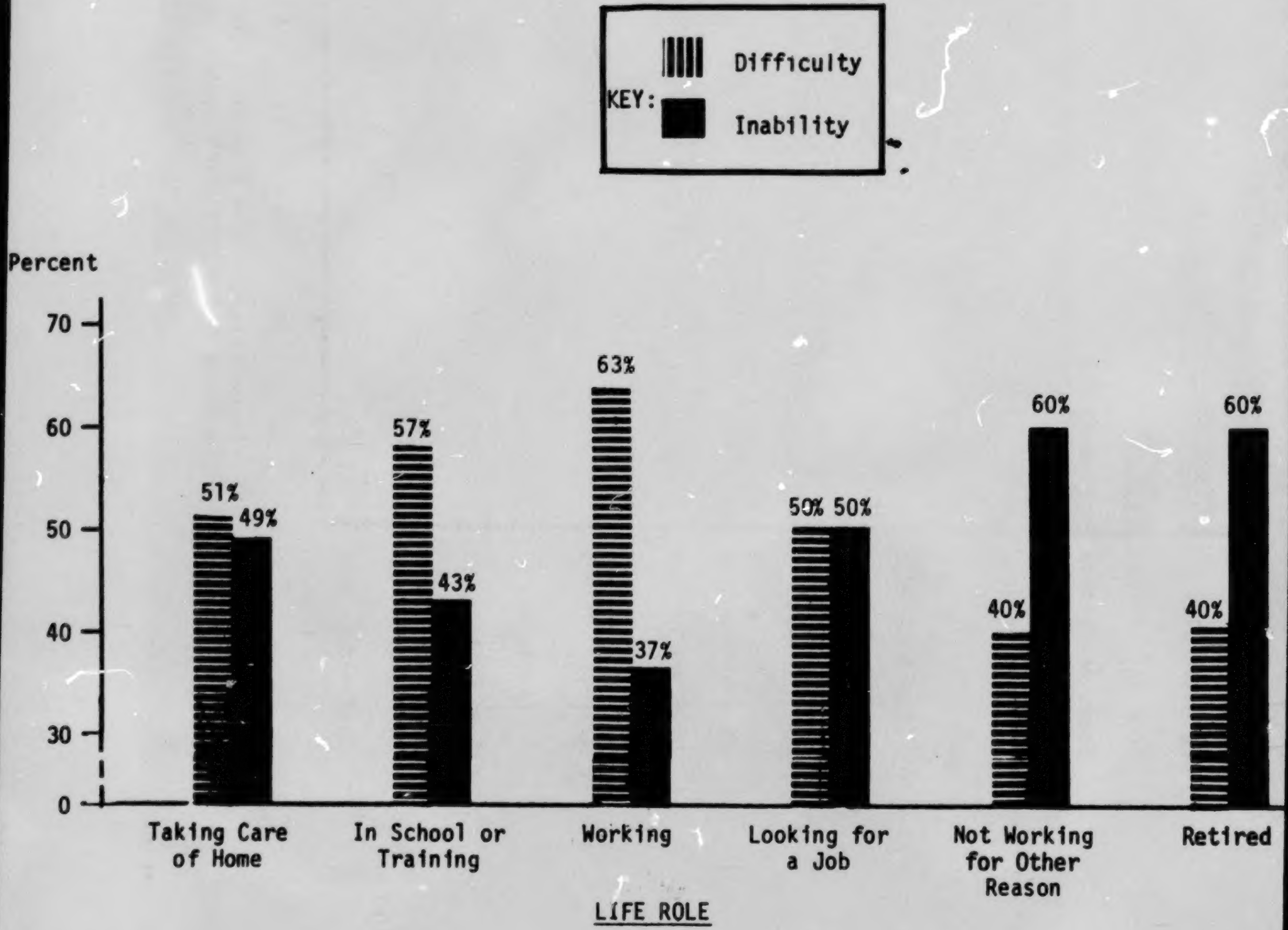
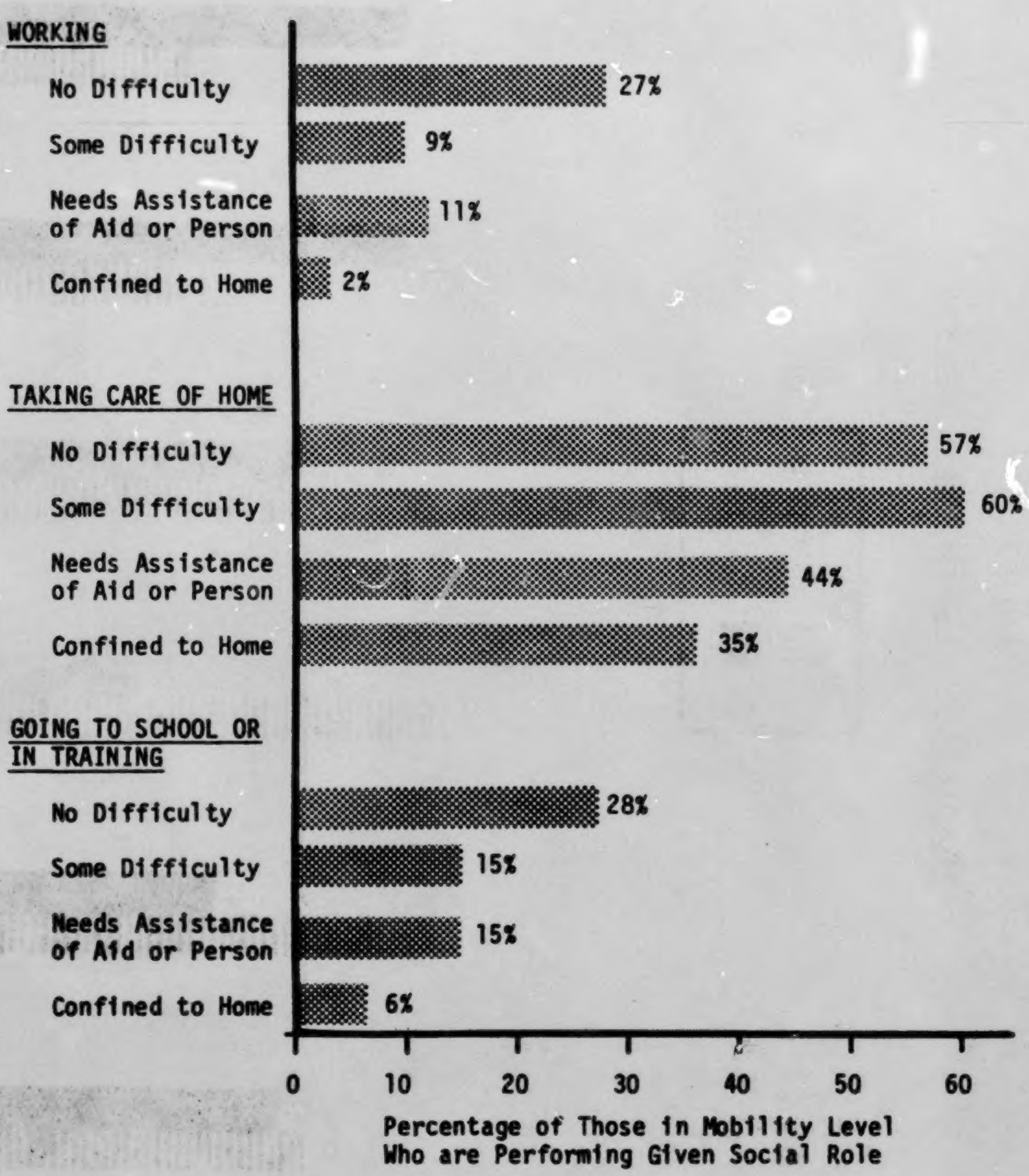


Figure 4-11

Social Role by Mobility Level



Employment/Occupational Status

Labor Force Participation--Excluding those who are going to school or are in training, the labor force participation rate among 17-64 year olds is 31%. This includes both persons whose usual social role is working and those who are looking for work. The participation rate for women is 23%, and that for men is 42%. The rate is 41% among persons 17-44 years old, and 24% among persons 45-64 years old. The comparable labor force participation rate for 18-64 year old persons in the country as a whole in 1977 was 62% (U.S. Department of Commerce, 1978, p. 398). We see, then, that relative to the general population, less than 50% of the working age population with reading limitations is in the labor force.

Working age adults who are unable to read have a greater tendency to say that they are not working or are retired for reasons of poor health or disability than those who merely have difficulty reading. To illustrate, approximately 51% of the working age adults who were not working, and were unable to read regular print, said that they were not working because of poor health or disability, compared to 38% of those who have difficulty seeing. However, it is probably safe to assume that many of these persons in fact drop out of the labor market because they are discouraged by how difficult it is to find a job.

Unemployed persons in the working ages who suffer reading limitations in later life, after having been employed for a period of time, tend to say that they are retired by choice or age, rather than for reasons of health. Here too, however, it is plausible to suppose that some of these persons are similarly discouraged by the lack of job prospects, or possibly even by subtle forms of discrimination against elderly impaired persons.

Another factor which bears on the issue of labor force participation is the existence of disincentives to work (Levitan and Taggart, 1977). A finding of ours which seems to support this hypothesis is the fact that among younger, unemployed persons (ages 17-44), where one might expect the motivation to work to be high, only 11% are receiving vocational training, and only 15% are receiving some form of counselling.

However, poor preparation and low skills may also be problems. Although the labor force participation of the working age respondents is very low, the actual employment of those persons in the labor force is very high (85%). Employment rates are 76% for men and women in the ages 17-44 years, and 100% for men and 90% for women in the ages 45-64 years. These findings are similar to data of the Bureau of the Census, 1976 Survey of Income and Education (SIE) and other findings from the National Center for Health Statistics 1977 Health Interview Survey for persons with vision loss. (See Kirchner and Peterson, 1979.) Of course, the reason for the high employment rate is that many persons simply do not enter the labor force.

Of the respondents who are employed, nearly half are working at white collar jobs, a rate similar to that for all United States workers (U.S. Department of Commerce, 1978, p. 419). About half of all employed persons who have congenital reading limitations are also working in white collar jobs. The implication of these findings is that in spite of a generally lower educational attainment for this group, they are still concentrated in "intellectual" professions.

The challenge involved in obtaining jobs in the upper occupational strata is most apparent when we examine the education and employment status of persons who experienced reading limitations in early life. It appears that these persons attend school longer than their peers in the general population, perhaps to help them over the hurdle of locating a good first job. Of those working, 18% are college graduates and another 12% have attended college. Case studies indicate that state vocational rehabilitation counsellors and placement staff, who serve as gatekeepers to state money for special assistance for the disabled, regularly fund higher education as one means of circumventing discrimination. (Kirchner, 1979 forthcoming.) By developing better skills, or at least obtaining the credentials of advanced formal education, their clients do not have to compete as hard for entry-level positions in the labor force. But, curiously, the placement of disabled persons in well-paying blue collar jobs has proven extremely difficult: perhaps the fear of a higher risk of accidents or less confidence that disabled persons can be as productive as able-bodied persons in these settings contributes to this situation. Thirty percent of all those employed work in the manufacturing, construction and transportation industries; 15% in sales; 19% in business; 33% in services; and 6% in other sectors. Table 4-15 provides

Table 4-15

Industries and Occupations in Which Persons Having Limitations in Reading Regular Print are Employed --- 1977

INDUSTRY	PERSONS 1000's	PERCENT
Construction	20	6
Manufacturing	58	18
Transportation, Communication	28	9
Wholesale & Retail	45	14
Finance/ Business/Repair	34	10
Social Service	59	18
Private Service	26	8
Entertainment/Recreation	29	9
Other	27	8
Total Employed Persons	326	100
OCCUPATION		
White Collar		
Professional & Technical	30	9
Teachers	11	3
Managerial & Administrative	33	10
Sales	39	12
Clerical	38	12
Subtotal	151	46
Blue Collar		
Crafts	49	15
Operatives	44	14
Laborers	17	5
Service and Other	65	20
Subtotal	175	54
Total Employed Persons	326	100
Weighted Sample Size		(892)

occupational and industry data. The Appendix provides a more detailed listing of occupations.

About 58% of the employed respondents are married and have children with whom they live, while 13% live alone; males account for 60% of those employed. (Non-whites are found working in the same proportions as are whites.)

About three-fourths of those employed are in the 17-44 age group. The remainder are evenly split between persons 45-64 years old and those 65 and older. Declining labor participation and employment rates with age suggest that for the group of persons who have suffered disability later in life, job retention is extremely difficult. Reading limitations may be only one of the factors contributing to this situation.

Hours of Week Worked

The sample size was insufficient to allow for an assessment of the impact of reading limitations on the number of hours worked. Overall, 12% of the employed respondents work marginally (1-10 hours per week), 12% work light part-time (11-20 hours), 11% work more than half-time (21-34 hours), and 65% work full-time (taken as 35 or more hours). Persons who have mobility limitations, however, are about four times less likely to be employed than their counterparts who do not have mobility restrictions, and those who are employed work significantly fewer hours. These data are presented in Table 4-16 and Figure 4-12.

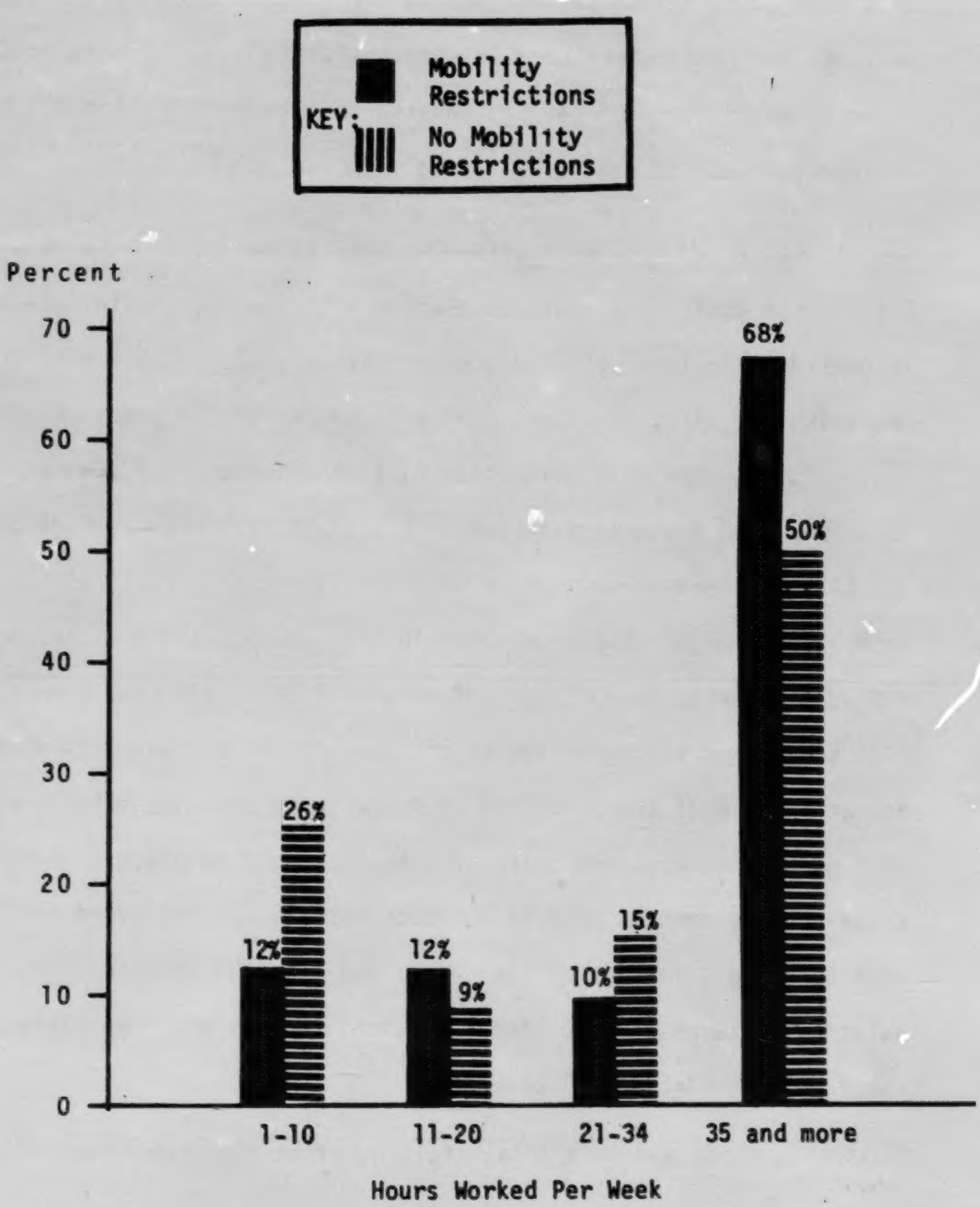
Table 4-16

Average Hours Worked Per Week by Limitation Typology

READING LIMITATION	Weighted Sample Size	Total	Hours Per Week Worked 1-10	11-20	21-34	35 or More
Single Limitation		----------	----------	Percent	----------	----------
Seeing Only	(368)	100	10	15	11	66
Learning Only	(65)	100	12	6	8	74
Multiple Limitations and Combinations						
Physical Only and Physical & Learning	(46)	100	47	4	4	46
Seeing & Physical	(164)	100	8	11	12	68
Seeing & Physical & Learning	(104)	100	13	12	12	64
Seeing & Learning	(121)	100	11	8	16	65
All	(868)	100	12	12	11	65

Figure 4-12

Average Hours Worked Per Week by Employed Persons by Level of Mobility Limitation



Education

Teaching children to read, and then improving their reading ability is one of the main goals of primary education. During the public school years, reading habits are established which typically last through an individual's lifetime. College usually opens new horizons for professional and leisure activities. Hence, the finding of every major study of reading habits--that better-educated adults, on average, tend to read more--comes as no surprise.

Educational Attainment of Adults--Compared to the adult U.S. population as a whole, the adult population with reading limitations is considerably less well-educated. This is seen in Table 4-17 by comparing the years of school completed by persons 25 years old and over. In the population with reading limitations, 38% of the adults have completed 8 years of school or less, 39% have been to high school, and 18% have been to college or business, trade or vocational training school after high school;* whereas in the U.S. population as a whole, 21% of the adults have 8 years of school or less, 52% have been to high school and 28% have been to college. It is not clear at what educational level the 3% of the adults with reading limitations who have gone to special and ungraded schools should be placed. Many of these persons went to private or state schools for the blind and others went to schools for the multiply-impaired learning disabled. At the outside, in terms of educational attainment, they would probably be comparable to high school attendees.

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*Business, trade and vocational training after high school amounts to about 4%.

Table 4-17

Years of School Completed by Persons 25 Years Old and Over

Level	Population with Reading Limitations 1977	U.S. Population* 1977
	---------- Percent	Completing Level Shown ----------
Elementary School		
0-4 Years	8	4
5-7	15	7
8	15	10
High School		
1-3 Years	16	15
4	23	36
College**		
1-3 Years	11	13
4 Years of More	7	15
Other		
Special Schools and Ungraded Schools	5	--
	100.0	100.0

* U.S. Bureau of the Census, Statistical Abstract of the United States:1978. Washington, D.C., 1978, p. 144.

** Includes business, vocational or trade school after high school.

The finding of relatively less schooling among our adult respondents is an extremely significant one since educational attainment has been shown to be the prime determinant of adult reading behavior (see Chapter 6). On the basis of this finding alone, then, we should expect that adults with reading limitations, on average, will be reading less than adults in the national population at large.

Educational Attainment of All Respondents--The educational attainment of all respondents is a different matter from that of adults. Table 4-18 shows the different levels of attainment by reading limitation. Twenty-nine percent of the persons who have only physical limitations and 24% of those with only seeing limitations have attended college, which is quite close to the national average.

Effect of Age on Onset of Limitation--The early onset of a reading limitation does not seem to be an insurmountable obstacle to educational achievement. Table 4-19 shows that the proportions of persons who went to college* were approximately the same for those with onset of disability at birth, in the first five years, and during the public school ages: 26% of those (in the age group 17-44) with congenital onset went to college, as did 21% with onset between years one and five, and 28% with onset during the school ages of 6-16. But a larger proportion of persons with early onset received relatively little education: 12% of the congenital group of current age 17-44 reported no education, 17% reported an elementary education, and 35% had gone to high school, in contrast respectively to 6%, 15% and 50% for persons with childhood onset (years one to six) and 0%, 11%, 61% for onset during the school

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*Includes business, trade or vocational training after high school.

Table 4-18

Highest Level of School Attended by Reading Limitation Typology

			Level				
READING LIMITATION	Weighted Sample Size	Total	None	Elementary School	High School	** College & Beyond	Special School & Other
Single Limitation		Percent					
Seeing Only	(2279)	100	1	30	43	24	1
Learning Only	(431)	100	8	57	17	10	9
Physical Only	(326)	100	2	28	41	29	1
Multiple Limitations							
Seeing & Physical	(1805)	100	2	38	39	21	1
Seeing & Physical & Learning	(1088)	100	4	46	33	14	4
Seeing & Learning	(563)	100	4	47	25	18	8
Physical & Learning	(167)	100	7	41	23	15	14
SPECIFIC LIMITATION							
Seeing							
No Difficulty	(925)	100	5	43	26	19	7
Difficulty	(2653)	100	1	39	39	21	1
Unable	(3081)	100	3	37	37	22	2
Holding							
No Difficulty	(5163)	100	2	39	34	22	3
Difficulty	(756)	100	4	35	36	22	2
Unable	(482)	100	8	34	39	21	1
Turning							
No Difficulty	(5639)	100	2	39	36	21	3
Difficulty	(581)	100	3	38	34	22	3
Unable	(439)	100	10	36	35	16	3
Sitting Up							
No Difficulty	(5863)	100	2	39	36	21	3
Difficulty	(400)	100	5	36	38	18	3
Unable	(394)	100	11	32	36	19	1
Weakness							
No Difficulty	(3609)	100	2	38	36	22	3
Difficulty	(648)	100	3	40	36	19	2
Unable	(2400)	100	3	39	37	19	2
Learning							
None	(4409)	100	2	33	41	24	*
Perception +	(1468)	100	2	49	31	16	2
Memory/Confusion/Attention Span +	(544)	100	2	55	24	13	6
Mental Retardation and Other	(235)	100	25	21	10	9	34
All	(6659)	100	3	38	36	20	3
Weighted Sample Size							

* Less than 0.5%.

** Includes business, vocational, and trade schools after high school.

Table 4-19

Educational Achievement by Age at Onset of Reading Limitation Within Current Age Groups

CURRENT AGE AND AGE AT ONSET OF LIMITATION	Weighted Sample Size	Highest Level of School Attended					
		Total	None	Elementary (1-8 Years)	High School (9-12 Years)	College (13 or More Years)***	Special School & Other
		Percent					
Currently 6-16 Years Old							
Stage at Onset:							
Congenital (0-1 Years)	(352)	100	13	51	9	*	27
Childhood (1-5 Years)	(113)	100	6	74	4	*	16
School Age (6-16 Years)	(298)	100	*	80	13	*	7
Currently 17-44 Years Old							
Stage at Onset:							
Congenital	(454)	100	12	17	37	26	8
Childhood	(72)	100	6	15	50	21	9
School Age	(235)	100	*	11	61	28	*
Early Working Age (17-44 Years)	(322)	100	*	7	56	37	*
Currently 45-64 Years Old							
Stage at Onset:							
Congenital	(183)	100	11	38	31	17	2
Childhood	(21)	100	**	**	**	**	**
School Age	(177)	100	6	30	48	16	*
Early Working Age	(539)	100	*	30	48	22	*
Later Working Age (45-64 Years)	(898)	100	1	32	46	21	*
Currently 65 and Over							
Stage at Onset:							
Congenital	(100)	100	10	47	27	14	3
Childhood	(27)	100	**	**	**	**	**
School Age	(121)	100	*	49	26	25	*
Early Working Age	(189)	100	*	63	27	10	*
Later Working Age	(901)	100	*	45	33	22	*
Retirement (65 Years and Over)	(1823)	100	1	39	36	23	1

* Less than 0.5%.

** Data insufficient for reliable estimates.

*** Includes business, vocational or trade school after high school.

ages. This same pattern of educational achievement was observed for the age group 44-64 years.

Table 4-19 also shows that for current school-age children the proportion of children enrolled in special schools is very much higher for persons with congenital limitations (27%) than for persons suffering disabilities later (16% for those with limitations incurred during early childhood and 7% for those who developed limitations during the school-ages). This data may reflect the effect of greater severity of congenital limitations, possible tracking within schools, or lowered parental expectations. It appears though, that there was a different level of encouragement and stress on educational achievement some 40 years ago. For the age group 65 years and over, the same proportion of persons with congenital disorders had no formal education as the other age groups, but a lower proportion went to college than those with non-congenital disorders.

Effect of Compounding Limitations--Within the total sample, persons with hearing limitations, on the average, are slightly less well-educated: only 17% have gone to college.* More marked differences are apparent for persons of poor health. Persons who use a cane or other device and/or the assistance of another person to get about appear to have compensated for these mobility limitations; 31% have had some college education, compared to 20% of the respondents who report no mobility restrictions.

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*This conflicts with Shein's 1977 finding that a higher percentage of the deaf achieved college education. The difference may be due to hearing problems being acquired in later life for most of our sample.

Persons Currently in School or Training

Nationally, we estimate that about 385,000 persons with print limitations are presently in school or training. (See Table 4-20.) Forty-two percent of those in school or training are attending regular schools, 17% are in special classes, 19% are in special schools for disabled persons, and eight percent are attending college. Another nine percent are studying or training in workshops and five percent are undergoing training or rehabilitation in some other sort of facility. As might be expected, children going to special schools or classes tend to have more severe limitations, multiple reading limitations and more non-reading problems in addition to their reading problems, than those going to public schools or college. These data are presented in Figure 4-13.

Of the 19% of the respondents who are currently in school or training, disproportionately more persons have learning problems and are living at home with their parents. Only three percent of those in school or training are living alone and six percent are adults living with their spouses and/or children.

One out of seven of those persons who are working are also going to school or are in training; slightly over half of these are in college.

Table 4-20

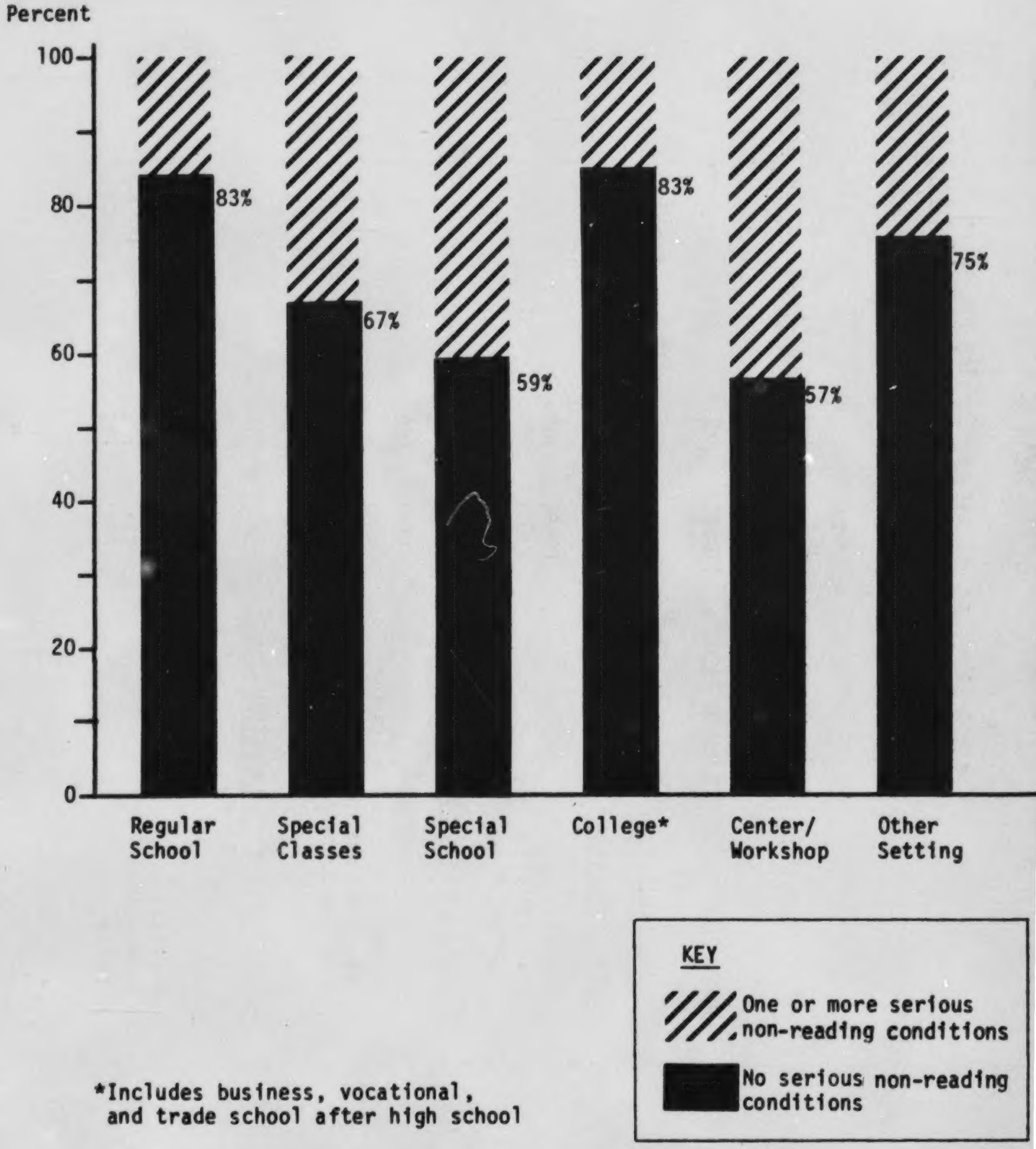
Current School or Training by Reading Limitation Typology and by Selected Specific Reading Limitation

	Weighted Sample Size	Total	Current School or Training Regular School	 Special School/ Class	 ** College	 Center/ Workshop	 Other Setting
NUMBER OF PERSONS ATTENDING (1000's)	(1055)	385	162	135***	33	34	21
READING LIMITATION							
Single Limitation		----------	----------	Percent	----------	----------	----------
Seeing only	(185)	100	47	19	17	7	10
Learning only	(325)	100	51	36	*	7	*
Physical only	(41)	100	*	*	*	*	*
Multiple Limitations							
Seeing & Physical	(58)	100	*	*	*	*	*
Seeing & Physical & Learning	(154)	100	29	49	*	12	*
Seeing & Learning	(194)	100	49	39	*	*	*
Physical & Learning	(98)	100	51	36	*	7	*
SELECTED SPECIFIC LIMITATION							
Seeing							
No Difficulty	(464)	100	44	38	*	8	*
Difficulty	(333)	100	56	24	14	*	*
Unable	(256)	100	21	45	*	18	11
All	(1050)	100	42	35	9	9	6

* data insufficient for reliable estimates
** includes business, vocational and trade schools after high school
*** divided about equally

Figure 4-13

Persons in School or Training Showing Proportion Having Serious Non-Reading Conditions



*Includes business, vocational, and trade school after high school

Time Spent in Special Training to Compensate for Reading Limitations

The period of time spent in special training to compensate for reading limitations is shown in Table 4-21. Persons with any kind of learning limitations were typically in training for a number of months: about 60% were in training for more than six months. Short term training of 1-2 months, or 3-6 months was much more common for the larger groups of persons with visual or physical deficits. For example, about 50% of those with problems in seeing experienced rehabilitation training for less than six months. This finding suggests that: 1) the National Library Service has a much longer period to develop awareness of its service among persons with learning difficulties than among those with visual or physical deficits, and 2) efficient means need to be set up to contact persons with limitations in seeing or dexterity before they leave the formal rehabilitation network.

More significantly, however, the findings show that many persons who presumably would benefit from rehabilitation training do not receive it. Overall, only about 475,000 persons, or one-fifth of all persons interviewed, had participated in training to compensate for their reading limitations. Training to overcome dexterity and hearing/speech problems seems as common as practice specifically in reading and writing. Most of the training reported was obtained in schools rather than adult rehabilitation centers. Slightly more than a third of those who were legally blind reported receiving special training to compensate for their visual deficits. While this may be explained by the fact that most persons with seeing deficits are older, it is certainly not a desirable situation.

Table 4-21

Length of Time, Setting and Skills Learned During Training to Compensate for Reading Limitations or Physical Problems

A. Length of Time in Training for Reading or Physical Problems	Number of Persons	Percent
	1000's	
1-2 months	89	19
3-6 months	86	18
6-12 months	66	14
1-2 years	40	9
3-5 years	48	10
5-10 years	133	28
10 years or more	14	3
Total	100	100

B. Skills Learned*

Reading, Writing	30
Physical Therapy	30
Vocational/Occupational Rehabilitation	8
Speech, Hearing	7
Home Management	5
Other	7

C. Training Setting*

Regular School	21
Special School	16
Center or Workshop	10
Hospital	8
Home Tutor	7
Other	7

* Does not add up to 100%, as some persons specified the type of training, others the setting for the training, and others both.

Income

The National Library Service provides braille and recorded reading materials at no cost to the subscriber. Hence, a financial or economic approach cannot be expected to be especially helpful in explaining library utilization. Childhood habits, the reading behavior of self and family, household and life role, and the perception of a need for alternate reading media may be more significant determinants of utilization than straightforward economic considerations. Nevertheless, current family income, insofar as it reflects socio-economic status, values and attitudes may serve as an important index of past and potential reading behavior.

Many people, especially older persons, view accepting free public services as tantamount to being on welfare or taking charity, rather than as their entitlement. McKinlay (1972), Wan and Soifer (1974), and Anderson (1973) have shown that the influence of paying (or not paying) for social and medical services on utilization behavior and the quality of services is not clear. Medicaid and Medicare have greatly increased the use of hospitals and health care professionals, but a skepticism which inhibits use has also developed among some persons concerning the quality of a service for which there is no charge. (Also, some health professionals will not accept medicaid patients, and furthermore, these programs do not pay for all services.) Thus, the "welfare stigma" may also be a significant factor inhibiting use of free library services like the NLS.

The survey found that irrespective of living arrangement or social role, persons with reading disabilities live in households in which the total income is low. Nearly half of them live in households with reported incomes under $5,000 before taxes, compared to only one-fifth in that income bracket for the nation as a whole. (See Table 4-22 and 4-23.) Over one-third of the respondents with household incomes under $5,000 live alone. (See Figure 4-14.)

Among the respondents living alone are many older persons who live on very limited, fixed retirement incomes. Many other older persons who share households are financially dependent on their families. For these persons, current personal income does not reflect their socio-economic past. But whether there are books and magazines in the home, whether large print materials and special rehabilitation training and devices are known about and can be afforded, and whether the family resources have been drained by catastrophic illness, are all reading determinants affected by current income.

Of those living alone, 77% have incomes under $5,000 and 95% have incomes under $10,000. A large percentage of persons with reading disabilities are female and over fifty years of age; their spouses, if living, are likely to be still older and also not working and hence, the couple's collective retirement income is likely to be low. The mean income of all United States households in 1976, where the head of the household was 65 years or older, was $8,708 (U.S. Department of Commerce, 1978), which is about the same as that for similar households having members with reading disabilities.

Table 4-22

Household Income - 1977 by Reading Limitations

			Household Income - 1977				
Reading Limitation	Weighted Sample Size	Total	Under $5000	$5000 to $9999	$10,000 to $14,999	$15,000 to $19,999	$20,000 and over
		Percent					
Seeing							
No Difficulty	(869)	100	33	18	21	16	13
Difficulty	(2373)	100	45	27	11	10	6
Unable	(2880)	100	56	24	10	5	5
Holding							
No Difficulty	(4992)	100	47	25	12	9	7
Difficulty	(654)	100	62	18	9	6	6
Unable	(474)	100	47	25	14	8	6
Turning							
No Difficulty	(5156)	100	47	25	12	9	7
Difficulty	(544)	100	64	15	8	6	6
Unable	(422)	100	50	27	14	6	4
Sitting Up							
No Difficulty	(5315)	100	48	24	13	9	7
Difficulty	(370)	100	54	26	7	9	4
Unable	(356)	100	52	26	10	10	3
Weakness							
No Difficulty	(3342)	100	44	24	14	10	8
Difficulty	(535)	100	52	21	12	10	4
Unable	(2245)	100	54	25	9	7	5
Learning							
None	(3981)	100	51	25	11	7	6
Perception +	(1338)	100	50	23	11	8	7
Memory/Confusion/ Attention Span +	(511)	100	31	20	18	21	10
Mental Retardation and Other	(292)	100	31	14	19	20	15
Total	(6122)	100	48	24	12	9	7
Weighted Sample Size		(6122)	(2966)	(1466)	(743)	(541)	(406)

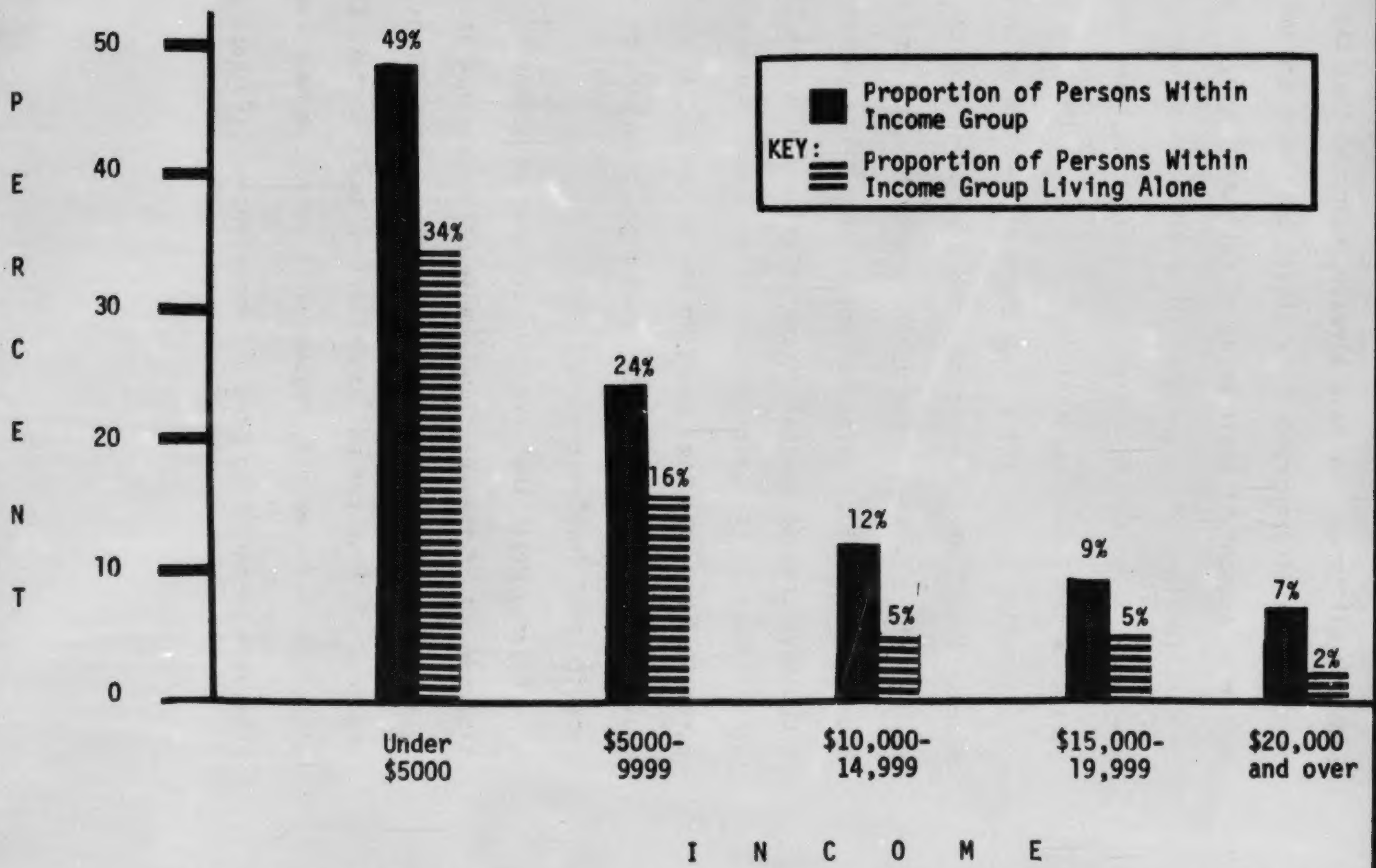
Table 4-23

Household Income - 1977 by Reading Limitation Typology and by Compounding Limitations

READING LIMITATIONS	Weighted Sample Size	Total	Household Income - 1977 Under $5000	$5000 to $9999	$10,000 to $14,999	$15,000 to $19,999	$20,000 and over
		Percent					
Single Limitation							
Seeing only	(2056)	100	47	26	13	8	6
Learning only	(406)	100	18	21	27	19	16
Physical only	(292)	100	51	18	15	7	9
Multiple Limitations							
Seeing & Physical	(1632)	100	56	25	9	6	4
Seeing & Physical & Learning	(999)	100	55	24	9	7	5
Seeing & Learning	(567)	100	42	22	12	14	9
Physical & Learning	(171)	100	37	9	15	26	13
COMPOUNDING LIMITATIONS							
Hearing							
No Difficulty	(4495)	100	44	25	13	10	7
Hard of Hearing or Deaf	(1627)	100	61	21	10	4	5
Mobility							
No Difficulty	(3992)	100	40	26	14	12	8
Some Difficulty	(555)	100	55	22	10	9	4
Needs Assistance of Aid or Person	(1143)	100	51	23	13	6	7
Confined to House	(1026)	100	65	20	9	4	4
Confined to Bed	(313)	100	59	25	4	6	6
Health							
Good	(3175)	100	38	24	16	13	9
Fair	(2053)	100	57	27	8	5	4
Poor	(846)	100	69	18	7	3	3
Serious Non-Reading Conditions							
None	(3042)	100	39	27	14	12	8
1 Condition	(1801)	100	56	20	11	6	6
2 or More Conditions	(1279)	100	62	21	8	5	4
Total	(6122)	100	48	24	12	9	7

Figure 4-14

Distribution of Household Income Showing Proportion Living Alone



Some small variation in income distribution by type of reading limitation was observed, but the general presence of poverty is the same for all types. We have already indicated that the reading disabled are disproportionately older, that most are not working, either on account of their being of retirement age, in poor health or enrolled in school, and that their limitations tend to restrict their earning capacity by limited the occupations that are readily accessible to them without advanced training.

Finally, it is likely that there will be variations in the "marketbasket" of goods and services purchased with the family income. We did not probe this issue in any depth, but it seems obvious that an older, more frail and disabled population, and a younger, more immobile group have unusual medical, transportation and household help expenses. Even if most of the costs of medical treatment are borne by third-party insurers, the time spent in health and social service agencies drains one's time and energies that might otherwise be devoted to pursuits that involve reading.

Poverty means that many pursuits for which one may have the leisure time are out of the question because of the expense involved. Since mass transit is rarely convenient for those with mobility limitations, and most of these persons cannot afford taxis to take them to cultural activities and community resources, they may be deprived of what might otherwise be enriching personal experiences. (Perhaps this is one reason why the nation's senior citizen activity centers have not been well-used.) Severe economic hardship thus compounds limitations in reading that are due to restricted accessibility, hearing loss and other physical problems.

ATTITUDINAL FACTORS AND PERSONAL CONCERNS

Persons Registered as Legally Blind

In an opening section of this report we raised a question as to the relationship of registering for legal blindness and being referred to the NLS. In this section, we present some characteristics of persons registered as legally blind.

Earlier we showed that, among the respondents, 86% of those persons certified as "legally blind" were unable to see well enough to read print and 14% had difficulties in seeing to read. The proportion of those with difficulty is greatest for the young (32% for ages 6-16) and then declines with age (25% for ages 17-44 years, 22% for ages 45-64 years, and 6% for ages 65 years and over). There is a greater incentive among the young and their parents to press for "legally blind" status to become eligible for special services. (See Tables 4-24a and b.) Differential rates of registration for legal blindness are shown for the different age and income groups in Figure 4-15.

To become registered as legally blind seems more common in the Northeastern and far Western states, and in metropolitan areas, as compared to the rest of America. This is seen in Table 4-25, where prevalence data for legal and total blindness are presented by region. Nationally, we estimate that there are about 483,000 legally blind persons, and 105,000 totally blind persons.

Table 4-24a

Selected Disability and Health Characteristics of Legally Blind Persons - 1977

Characteristic	Percent of Legally Blind Who Have Given Characteristic*
Life Stage at Onset	
Congenital	21
Childhood	3
School Age	8
Working	16
Middle Age	27
Retirement	25
Total	100
Rate of Onset	
Gradual	72
Sudden	28
Total	100
Limitation Typology	
Seeing	46
Seeing and Physical	37
Seeing and Learning	7
Seeing, Physical and Learning	10
Total	100
Hard of Hearing or Deaf	16
Mobility	
Stay in Bed	6
Stay in House	17
Needs Aid or Person	41
Has Some Difficulty	10
Has No Difficulty	26
Total	100
Health	
Good	56
Fair	30
Poor	14
Total	100
Cannot Operate Record or Cassette Player	24
Speech on Radio or TV is too Fast	17
Use Glasses or Seeing Aids	66

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*Weighted Sample Size is approximately 1300, depending on the question.

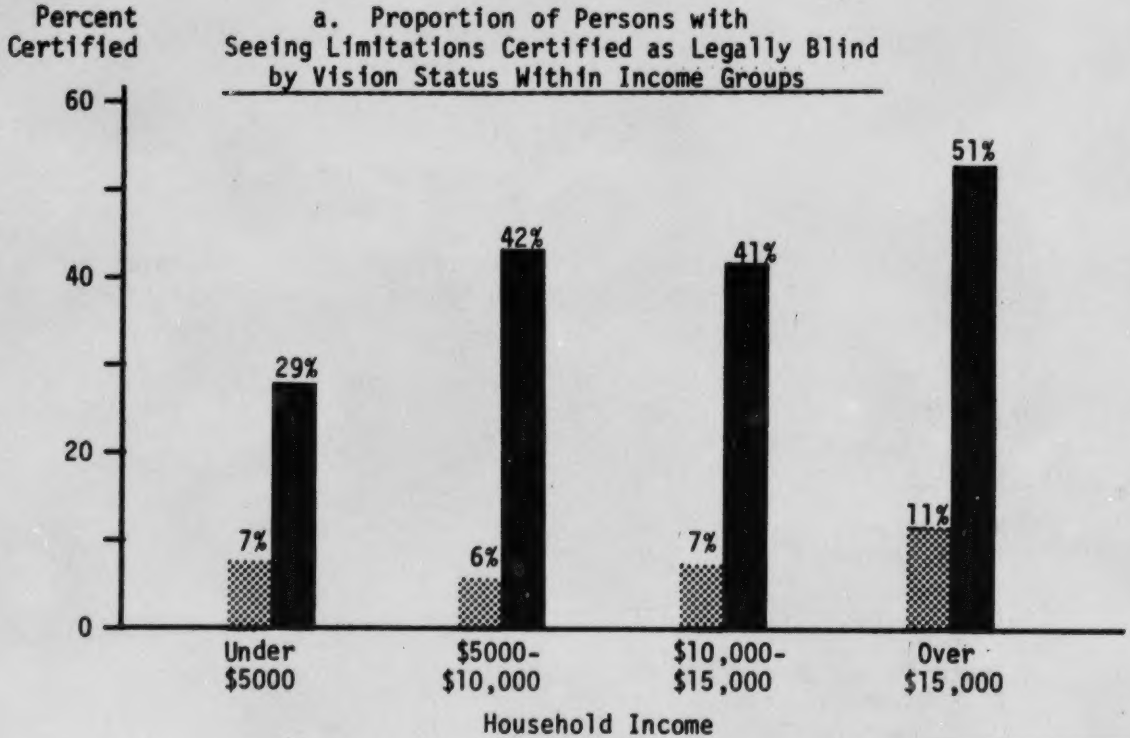
Table 4-24b

Selected Social and Demographic Characteristics of Legally Blind Persons - 1977

Age Group	Percent of Legally Blind Who Have a Given Characteristic*
6-16	5
17-44	22
45-64	27
65 and over	47
Total	100
Sex	
Male	48
Female	52
Total	100
Race	
White	89
Non-White	11
Total	100
Highest Grade of School Completed	
Elementary School (1-8)	24
High School (9-12)	28
College (13 and up)	48
Total	100
Income	
Under $5000	45
$5000 - 9999	27
$10,000 - 14,999	12
$15,000 - 19,999	10
$20,000 and over	6
Total	100

Figure 4-15

a. Proportion of Persons with Seeing Limitations Certified as Legally Blind by Vision Status Within Income Groups



b. Proportion of Persons with Seeing Limitations Certified as Legally Blind by Vision Status Within Age Groups

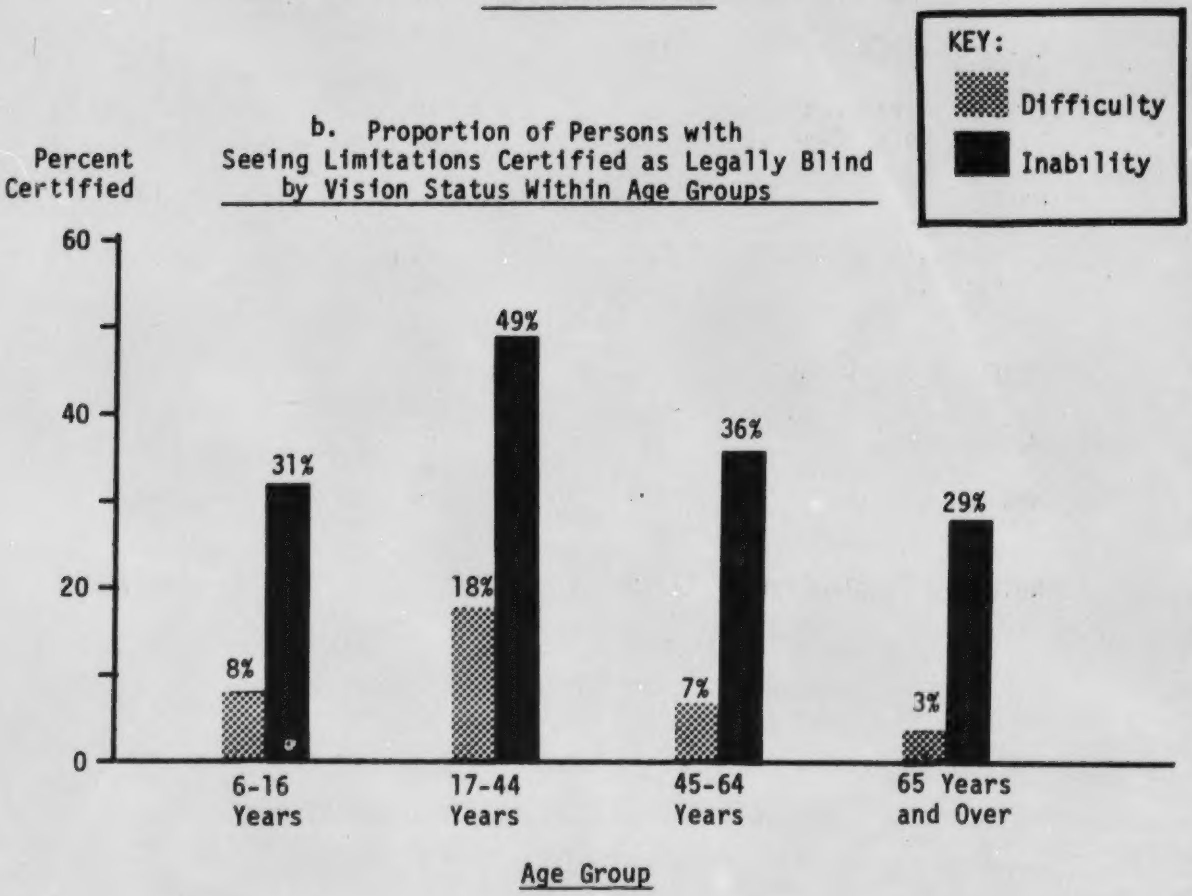


Table 4-25

Prevalence of Reported Legal and Total Blindness by Region

	Legally Blind		Totally Blind	
REGION	Estimated Prevalence	Percent of all Persons with Visual Limitations in Region	Estimated Prevalence	Percent of al Persons with Visual Limitations in Region
	1000's		1000's	
United States	483	22	105	5
North East	133		33	8
New England	58	41		
Middle Atlantic	75	29		
South	141		35	4
South Atlantic	82	16		
East South Central	36	19		
West South Sentral	23	13		
North Central	119		25	4
East North Central	83	18		
West North Central	36	22		
West	90		13	4
Mountain	23	26		
Pacific	67	31		
PLACE OF RESIDENCE				
Metropolitan	359	25	77	5
Non-Metropolitan	124	16	28	4
Weighted Sample Size	(1318)		(287)	

Although we lack clinical data on visual acuity and field, it appears that males are more likely to register themselves as legally blind than are females; 28% of the males with reading problems due to limitations in seeing are legally blind, but only 18% of the females have been so certified. This is curious, especially since the prevalence of seeing problems is 1.5 higher for women than for men. Among persons in the 6-16 age group, the proportion of men unable to see print registering as legally blind is 38%, whereas it is 25% for women; in the 17-44 age group, the rate is 45% for men and 52% for women; among persons 45-64, the rate is 45% for men and 31% for women; and among persons 65 and over, the rate is 40% for men and 24% for women. (See Table 4-26.)

Legal blindness is also more common among visually impaired whites than non-whites: 24% of the white respondents are legally blind, compared to 14% of non-whites with similar visual status.

Certification of legal blindness appears to be closely associated with education and income as well as sex, as others (i.e., Kulka, Veroff and Dovran, 1979) have repeatedly shown is the case with help-seeking behavior more generally. In our sample, 16% of the persons who are severely visually impaired and have a primary school education (1-8 years) are certified as legally blind, 22% of those with a high school education (9-12 years) are so certified, and 32% of those with some college education are.

Figure 4-15 shows that as household income rises so does certification for legal blindness. For example, 7% of those with difficulty seeing, and 29% of those unable to see, who have family incomes under $5,000, are registered as legally blind; but then among persons with

Table 4-26

Proportion of Persons Certified as Legally Blind Within Age and Sex Group, or Stage of Onset, By Severity of Visual Limitation

	Difficulty in Seeing to Read Regular Print	Unable to See to Read Regular Print
	----------Percent---------- (Weighted Sample Size)	
Age/Sex		
6-10 Years		
All	8% (234)	31% (136)
Male	9 (138)	38 (68)
Female	7 (96)	25 (68)
17-44 Years		
All	18 (393)	49 (436)
Male	22 (212)	45 (226)
Female	13 (181)	52 (210)
45-64 Years		
All	7 (854)	36 (816)
Male	8 (256)	45 (321)
Female	6 (598)	31 (495)
65 and Over		
All	3 (1224)	29 (1931)
Male	1 (349)	40 (669)
Female	4 (875)	24 (1262)
ALL Years		
Male	9 (965)	42 (1284)
Female	6 (1749)	29 (2036)
Life Stage at Onset		
Congenital	20 (363)	46 (422)
Childhood	18 (73)	42 (59)
School Age	5 (290)	33 (259)
Early Working Age	8 (487)	36 (440)
Later Working Age	4 (705)	34 (922)
Retirement	3 (664)	27 (1127)

family incomes above $15,000, 51% who are unable to read print and 11% of those who have difficulty doing so are certified as legally blind. It is not clear whether registration for legal blindness provides access to vocational rehabilitation and other services which then lead to greater incomes, or whether more affluent families are simply more receptive to registration for legal blindness. The proportion of persons registering as legally blind, who are unable to see print, increases as income rises.

The implications of these data for the National Library Service are twofold. First, certification of legal blindness typically involves registration with a state agency that is knowledgeable about special entitlements for persons with disabilities. Persons who do not become certified are less likely to learn about the National Library Service. Second, the seemingly greater acceptance of certification of legal blindness by young persons, well-educated persons, and persons in higher-income households, suggests that the largest demand for the NLS program may also come from these groups. These groups, however, form a very small percentage of the total population that NLS could serve; therefore, the NLS probably needs to make greater promotional efforts to identify potential subscribers who do not want to be labelled.

ATTITUDES AND CONCERNS

The respondents' views regarding the most positive and negative aspects of their lives provide insights into their strivings and suggest potential guides to reading behavior. We conjectured that, other things being equal (i.e., knowledge, awareness, access, income, education), persons who were more positive about their lives and physical limitations would be more active users of alternatives to regular print* than persons who had a negative outlook.

Typically, disabilities are viewed as attributes of individuals. In our view, however, a disability should be considered a family concern, since it impacts on family resources and lifestyle.** Many persons with reading limitations obtain assistance from others in getting reading materials, utilizing records or cassettes; others are read to by family members. Hence, as we noted earlier, it becomes important to consider the needs of persons with print limitations in the context of their families, taking into account their dependence on family beliefs and values, and the attitudes of the family members toward the disabled individual. Experiences with congenitally blind children seem to suggest that if the family accepts the child's limitation and deals with it as a challenge, the child is more likely to become independent and to successfully compensate for the limitation.

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*Even when one visits a client-oriented nursing home, where there are activity directors and libraries housing large print versions of Reader's Digest, and spoken versions of books, one rarely sees these being used. Older persons with limitations in reading, it appeared, resisted using these materials. One interpretation is that they did not want to be singled out as blind. In instances where we observed integrated group activities utilizing "talking books," there seemed to be a more positive attitude toward use of alternate reading materials.

**Family health is clearly becoming an American concern: see, for example, Yankelovich, Skelly and White (1979).

Table 4-27 presents codified responses to the question, "Finally, to wind up, would you tell me what you feel are the most positive and negative aspects of your (his/her) life nowadays?" This question provides a measure of "life satisfaction." Although it is a limited measure, the responses show the relative concern for issues of personal life (self-esteem and family, health, disability) in contrast to politics, public services, economic well-being, and the extended environment. On average, two areas of concern or topics were volunteered by each respondent. Positive attitudes (+ve) toward the topics were expressed about one and a half times as often as negative (-ve) attitudes. Sometimes both positive and negative statements (±ve) were made for the same issue. A sample of the volunteered responses is given in the Appendix.

It was significant to us that attitudes toward "disability" ranked fourth (4) among all responses, coming after "life as a whole" (1), "spouse and family" (2), and "treatment by others" (3). We have not concluded whether or not any mention of a disability should be taken as an indication of the acceptance of the disability because the converse does not always hold. For example, many extremely successful persons with vision impairments appear to have incorporated their impairments in their lives, and consequently do not think of or refer

Table 4-27

Attitudes Toward Expressed Life Concerns of Persons with Reading Limitations

Concerns	Weighted Sample Size	Overall Rank (Positive, Negative or both Positive & Negative)	Attitudes		
			+ve	-ve	±ve
			-- Percent --		
Life as a Whole	(2336)	1	21	7	4
Spouse & Family	(1887)	2	20	5	2
Self & Treatment by Others	(1594)	3	9	10	3
Disability or Appearance	(1474)	4	3	14	4
Responsibilities, Accomplishments, Use of Education, Household Activities	(1402)	5	12	6	1
Personal Health	(1350)	6	6	9	3
Mobility	(1235)	7	7	8	2
Leisure	(1042)	8	11	3	1
Friends or Relatives & Other People	(1037)	9	11	3	*
Job or School	(1036)	10	8	5	2
Religious Faith	(957)	11	13	*	*
Various Services, Life in the U.S., National Government, Other Countries	(832)	12	3	8	*
Income or Standard of Living & Cost of Living	(573)	13	2	7	*
Immediate Environment & Extended Environment	(441)	14	3	2	*

* Less than 0.5%

to these as disabilities.

The severity of a reading disability seems to be of much greater significance than the type of disability in predicting the proportions of positive and negative attitudes toward the range of life concerns (see Table 4-28). For example, 57% of the respondents with the most severe reading limitations expressed positive attitudes toward life as a whole compared to 76% of the respondents with minor limitations. Here the severity of the reading limitation serves as an indirect measure of how the reading limitation and other factors affect the individual's life more generally. Mobility and general health seem to be among the more important determinants of life satisfaction for the respondent. Table 4-28 also shows that positive attitudes increase for a number of areas of concern in a marked and fairly consistent manner with increments in health and independence.

Expressions of a few particular concerns were related to the age, sex, education, life roles, income and living situations of the respondents. To illustrate, religion, disabilities and health were among the most important concerns to persons above 65 years of age; whereas school was an important concern to parents of the youngest age group. But, in general, there were relatively minor variations (under 10%) in the relative frequency of expressed concerns by respondents across age groups. See Table 4-29.

The relative lack of strong differences in attitudes for a number of other social attributes looks much like the minor variation with respect to life satisfaction found for persons in the general household population by Bradburn (1965), Campbell (1976) , and Andrews and Witney (1977). As found by Weinberg and Williams (1978),

Table 4-28

Attitudes Toward the Five Most Important Concerns by Limitation Typology, Severity of Limitation, Compounding Limitations and by Respondent (Family or Self)

	Weighted Sample Size	Total	Life as a Whole			Spouse & Family			Self & Treatment by Others			Responsibilities & Accomplishments			Disability		
			+ve	-ve	±ve	+ve	-ve	±ve	+ve	-ve	±ve	+ve	-ve	±ve	+ve	-ve	±ve
		Percent															
A. READING LIMITATIONS																	
Single Limitation																	
Seeing only	(756)	100	69	14	17	78	14	7	46	46	7	71	21	9	16	67	16
Learning only	(126)	100	87	9	4	67	28	4	46	31	23	55	30	16	17	59	24
Physical only	(111)	100	62	6	32	77	20	3	41	47	12	52	39	10	24	55	21
Multiple Limitations																	
Seeing & Physical	(697)	100	65	13	21	76	18	6	41	47	12	55	35	10	10	70	20
Seeing & Physical & Learning	(390)	100	57	15	27	75	17	7	47	40	14	43	47	10	17	65	18
Seeing & Learning	(189)	100	64	5	31	68	24	7'	30	57	14	63	25	12	19	63	18
Physical & Learning	(68)	100	60	16	24	46	31	23	13	34	52	36	54	10	*	89	11
B. SEVERITY OF READING LIMITATION																	
Minor	(465)	100	76	11	13	71	22	7	55	33	12	75	16	9	22	63	16
Moderate	(676)	100	70	21	9	69	22	9	39	40	22	59	36	5	17	61	22
Severe	(421)	100	64	23	13	80	14	5	46	49	6	67	23	10	14	70	16
Very Severe	(774)	100	57	27	16	77	17	5	38	50	13	40	44	16	10	72	18
C. COMPOUNDING LIMITATIONS																	
Health																	
Good	(1525)	100	75	16	9	66	29	5	51	34	15	65	23	11	18	62	20
Fair	(291)	100	61	25	15	76	19	5	35	55	10	46	45	9	14	73	14
Poor	(495)	100	47	32	20	75	16	5	24	61	15	50	43	7	8	72	20
Mobility																	
No Difficulty	(1103)	100	75	15	10	72	22	6	48	36	16	72	23	5	20	67	13
Some Difficulty	(203)	100	60	26	14	72	23	4	30	54	16	39	38	13	12	63	25
Needs Assistance of Aid or Person	(453)	100	64	26	10	76	15	9	50	38	12	65	24	11	15	57	28
Confined to Home or Bed	(533)	100	51	31	18	78	15	7	30	57	13	25	58	17	9	75	16
D. RESPONDENTS																	
Families of Persons with Reading Limitations	(636)	100	55	36	9	76	16	8	41	42	18	52	36	12	11	67	22
Self-Respondents	(1700)	100	70	16	14	74	19	7	44	47	9	61	30	10	17	67	16
Total	(2336)	100	66	21	13	75	18	7	42	44	14	58	32	10	15	67	18

* less than 0.5%

Table 4-29

Attitudes Toward Life as a Whole and Disability by Selected Characteristics

	Weighted Sample Size	Total	Attitude Toward Life as a Whole			Attitude Toward Disability or Appearance		
			+ve	-ve	±ve	+ve	-ve	±ve
		Percent						
Age								
6-16	(164)	100	85	9	6	15	58	27
17-44	(273)	100	64	24	12	18	63	19
45-64	(677)	100	61	20	19	19	59	23
65 and over	(1222)	100	67	23	10	11	78	12
Sex								
Male	(932)	100	64	24	12	13	67	21
Female	(1402)	100	68	19	13	17	68	16
Race								
White	(1948)	100	64	22	14	14	69	18
Non-White	(356)	100	76	15	10	23	58	20
Region								
North East	(466)	100	66	20	13	13	71	16
South	(877)	100	66	22	13	13	71	16
North Central	(689)	100	66	20	14	17	62	20
West	(305)	100	66	25	10	16	63	22
Place of Residence								
Metropolitan	(1583)	100	67	23	10	15	68	17
Non-Metropolitan	(753)	100	64	18	18	14	66	21
Highest Grade of Education								
Elementary School (1-8)	(893)	100	68	21	11	12	70	18
High School (9-12)	(817)	100	63	23	14	17	66	17
College (13 and up)	(513)	100	72	12	16	17	65	17
Income								
Under $5000	(979)	100	58	26	16	11	77	12
$5000 - 9999	(552)	100	66	19	14	13	61	26
$10,000 and up	(509)	100	80	10	10	20	62	18
Living Situation								
Living Alone	(525)	100	68	18	15	8	78	13
Living with Others	(1776)	100	65	25	10	17	63	20
Total	(2336)	100	66	21	13	15	67	18

and Cameron, et al. (1973), the disabled and their families tend to view a disability as a fact of life, an inconvenience and/or a cause of frustration that they must cope with. Beyond that there is little consensus in their attitudes toward their limitations.

Of the demographic and social variables examined, the most important ones for predicting attitudes are income and living situation. Consistent with our expectations, persons with larger incomes who are living with others, seem to be happier than poor persons who are living alone. We found no geographical differences.

Finally, Tables 4-29 and 4-30 summarize the association between attitudes and number of key factors. Notably, they show that family members who served as proxy respondents for persons with reading disabilities have slightly less positive attitudes than self-respondents. This is consistent with results in studies of the general population which show that family members are negatively biased with regard to other people's feelings.

Interviewer Comments About Attitudes of the Respondents

Assessments by the interviewers and research staff about the telephone interviews provide some additional insights into the attitudes of the respondents. (After each interview, the interviewer completed a questionnaire about the interview process.) The interviewers were generally positive about the outcome of the survey and the interview process. They reported that over 88% of the respondents were very cooperative, nine percent were fairly cooperative, and three percent were uncooperative or hostile. The interviewers felt that 59% of their respondents enjoyed the interview very much, 38% did so moderately, and four percent did not seem to enjoy the inter-

Table 4-30

Size and Direction of Associations Between Social, Demographic and Physical Disability Variables and Expressed Concerns

		-- Social and Demographic Variables --									-- Physical Disability Variables --			
Expressed Positive Concerns	Weighted Sample Size	Age Older are	Sex Males are	Race Non-Whites are	Region	Urbanization	Education More Educated Are	Income More Affluent Are	Living Situation Persons Living Alone are	Family of Respondents Compared to Most Respondents are	Mobility Those With Restrictions are	Health Those in Poorest Health are	Severity of Reading Limitation	Legal Blindness
Life as a Whole (+Ve)	(2336)			M+				S+		M-	S-	S-	M-	S-
Spouse and Family (+Ve)	(1887)	M+	M+	M-			M+	M+	M+		M-	S-		M+
Self and Treatment by Others (+Ve)	(1594)			M+	West (M-)		M+	M+			S-	S-	W+	S-
Responsibility/ Accomplishment (-Ve)	(1402)			M+					M+	W-	S-	S-	W-	S-
Personal Health (+Ve)	(1350)	S-		W+		W+	W-	M+			S-	S-	S+	S-
Mobility/Going Outside (+Ve)	(1235)	M+			North Central (M+)				W+	W-	S-	M-		S-
Leisure (+Ve)	(1402)	W-	M+					M+	W-		S-			M
Friends, Relatives and Other People (+Ve)	(1037)	M+	W+	W-	South, West (M+)			M-		M-	W-	W-	M+	M+
Job or School (+Ve)	(1036)	S-	W+		South, North Central (W+)	W-	W-	M+	W-	W+	M-	S-	M+	
Religious Faith (+Ve)	(957)													
Expressed Negative Concerns														
Disability or Appearance (-Ve)	(1474)	W+	W					W	M+	W+	M+	W+	W+	W+
Various Services, Life in U.S., National Government, Other Countries (-Ve)	(832)	W+	W+		South (S)	M+	M+	M+	M+	M	M	W+	S	W
Income or Standard of Living, Cost of Living (-Ve)	(573)			M	West (M)	W+			M	W+	W	W		W

Key:

S, strong association, greater than 20%-points difference.
M, moderate association, between 10% and 20%-points difference.
W, weak association, between 5% and 10%-points difference.

+, positive direction, an increase in one variable is accompanied by an increase in another variable, e.g., older persons have more negative view of disability than do younger persons.

-, negative direction.

view at all. Proxy respondents tended to enjoy the interview less, as did persons whose attitudes were relatively negative. From our own monitoring of the pretest interviews, we saw that proxy family members often tended to be less helpful and more hostile about an individual's limitation, situation, and participation in an interview than were the respondents themselves. We frequently found that disabled persons wanted to elaborate at length in response to each question, reflecting the respondents' ways of adapting to social isolation.* Conversely, many times family members (mostly spouses, parents, or adult children) would interrupt the disabled person and abruptly terminate the interview. Whether this is due to a sense of privacy, protectiveness, resentment or guilt, this kind of negative attitude certainly must be communicated to the person with print limitations and affect the latter's perspectives of well-being.

The interviewers reported further that the respondents were generally confident (88%) and happy (86%), and relatively few seemed depressed (15%) or very lonely (12%). Most people talked freely about their medical problems and disabilities, and the way their disabilities affected their lives.** There was a definite feeling among the respondents that they wanted to improve themselves, and were searching for ways of doing this.

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*Bennett (1968) and Kent (1966) have discussed this issue in regard to older persons.

** Forty-nine percent of the respondents found the interview to be very interesting, 42% were moderately interested, and 8% were not interested at all. These statistics show that on the whole the respondents were concerned about the survey and its central issues. There were no major differences in interest in the survey by age, sex, race, region, education, living situation, major activity, reading disability, or attitude of the respondent. Healthy respondents, however, who were more mobile, tended to be slightly more responsive.

Conclusions

Persons with reading limitations are found in every age group, every occupation, every industry, and in a wide range of educational situations across the nation. Reading disabilities need not hinder a person from productive full-time employment, although added mobility and health restrictions do seem to reduce the ability (or opportunity) to work or attend school. All such situations demand appropriate reading resources. The fact that persons with congenital reading limitations are as well-educated and work, relatively speaking, as frequently in white collar positions as their counterparts who suffered reading limitations in later life indicates that reading disabilities need not be severely handicapping.

The implication of the demographic and social findings is that a broad range of reading media alternatives to regular print is required to satisfy the varied life roles of potential subscribers to the National Library Service. In other words, rather complete libraries with all the resources available to the general public are necessary to satisfy the overall needs of the "print handicapped." In addition, the collections need to be extensive to provide information on special rehabilitation techniques.

The very low rates of special rehabilitation training experienced by the respondents to compensate for their reading limitations may be viewed as a crucial obstacle to expansion of utilization of the NLS program.

Wide variations in the rates of certification of legal blindness by region, age, sex, race, educational level, and income also suggest a set of barriers that the National Library Service may need to overcome in promoting awareness and acceptance of its program.

APPENDIX 4-1

Sample of Expressed Concerns

Appendix

Sample of Expressed Concerns

Reading Limitation	Age	Sex	Respondent	Expressed Concerns
Blind	66	Male	Family	Positive: Hasn't been bored one minute since he went blind. He has been kept very busy. Negative: Feels his blindness, his life is down a little as far as doing different things.
Blind	65	Male	Self	Positive: My wife and I love working out doors and being together. We are very happy. Negative: I figured on travel, golf and fishing, and was a semi-pro in golf when I could see. Now I can't do anything in sports.
Unable to sit up to read, weak. Problems reversing letters, following line of print, following instructions.	52	Male	Self	Positive: We are building a ranch house. This (our present) house has three floors and it is too much for us. Negative: Worry about the kids. Prices are too high. Hope they don't get discouraged. My wife isn't too well either.
Weak, slow mentally.	28	Male	Family	Positive: Going out of house, away makes him very happy. Negative: Weather; snow and i upset him because of a fall on the ice this winter.

Appendix

Sample of Expressed Concerns

Reading Limitation	Age	Sex	Respondent	Expressed Concerns
Does not see or hear well.	83	Male	Family	Positive: Doesn't express himself much. Can't really answer that question. Negative: Recently said, "It's hell to get old.
Destroyed retinas.	86	Male	Self	Positive: I feel that we are all part here for a reason and purpose. If you lived your life like a Christian and just were happy, do what you can for people and everything will be good and full of happiness. Negative: Nothing negative at all.
Following along a line of print, words and letters disappear, move up and down, simply can not read.	81	Female	Family	Positive: Is able to take care of self, home & husband. Daughter and son-in-law provide information and transportation. Is perfectly happy, accepts old age and doesn't want to change anything.
Weak, following instructions with several steps, retarded and cerebral palsy.	7	Male	Family	Positive: The older he gets, the more he tries to do. He seems to advance more with time. Negative: Too many to say-physical problems mainly.
Unable to sit up to read, weak, inflammation of eyeballs, totally blind.	58	Female	Self	Positive: Serving God. Negative: I never look at things negatively.

Appendix

Sample of Expressed Concerns

Reading Limitation	Age	Sex	Respondent	Expressed Concerns
Weak, reverses letters, problems following line of print, following instructions with several steps, reads letters backwards.	9	Male	Family	Positive: I really don't know Negative: The only thing I would say is his attitude.
Stroke, one hand unusable.	57	Female	Self	Positive: My child, and grand children. Negative: Bad health, worked all my life for Levi and Safeway. Neither will pay me disability, so I can't get any thing. I have tried everythin
No coordination, cerebral palsy. Cannot control head, arms, or body. Cannot speak.	32	Male	Family	Positive: He is a very happy person. He loves going to Al Segal Center, loves people and people love him. We take him everywhere with us and he enjoys that. Negative: Nothing, just a few off days like we all have.
Weak, problems following along a line of print. Multiple sclerosis, sees double sometimes.	47	Male	Self	Positive: I going to go back to work someday. I'm hoping to get cured. Great wife, great kids. Negative: I get mad when I I can't do things. I can't help do things for my kids. I'm tired a lot. I fall a lot

Appendix

Sample of Expressed Concerns

Reading Limitation	Age	Sex	Respondent	Expressed Concerns
Cataracts, tiring and painful to read.	30	Male	Family	Positive: Not really anything. Can't think of anything. Negative: Very unhappy. The economy is tearing us apart. It's wrecking our marriage. The fact that we don't have money for adequate eye doctor care. I have a hot temper and I get nervous and upset and it upsets him.
Weak, diabetes, cataracts.	88	Female	Self	Positive: Needs are met, comfortable, free to do as I want. Negative: Nothing, except aches and pains of aged.
Weak, retina of eye is deteriorating and cannot be restored.	74	Male	Family	Positive: Doesn't get shook up one bit. Is happy doing work in yard with plants and trees. Bird feedings and squirrels and racoons. Has a very outgoing attitude toward life. Negative: None, seemingly, because of this inconvenience he still does not seem annoyed or upset about it at present.
Cataracts, weak.	77	Female	Self	Positive: I don't know. I wouldn't know, I don't stop to think. I enjoy my children and grandchildren and family. Negative: One neighbour visits too often.
Retarded, weak.	19	Female	Self	Positive: Sleeping, watching TV. Negative: Going to school.

Appendix

Sample of Expressed Concerns

Reading Limitation	Age	Sex	Respondent	Expressed Concerns
Weak, reverses letters, difficulty following line of print, cerebral palsy.	17	Male	Family	Positive: I can't think of any. None at all. Negative: He has no one his age. I can't help him with his physical therapy any more and he just sits around and has no activity. He has nothing to look forward to, no diversion, no recreation, nothing to look forward to.
Weak, reverses letters, difficulty following along a line of print, dyslexia.	9	Male	Family	Positive: Being in this community and having the help we have here. He doesn't feel he has any problem now. He is more self-confident. He knows his mother and father love him. Negative: Only negative is a sibling jealousy of younger brother. He is nearly blind and runs into walls and gets hurt very easily and Artie thinks we love Matthew more, but we don't.
Reverses letters, problems following along a line of print, following instructions with several steps, dyslexia.	26	Male	Family	Positive: Happy with homelife. Negative: Feels he is going nowhere. Dead end. Chip on his shoulder as to his inability to read. When son asks him to read to him, he can't or when he has to read and he is unable, makes him get upset.
Reverses letters, problems following instructions with several steps.	9	Male	Family	Positive: Anything he can do and do well and get credit for it when done. Negative: Very sensitive to negative approach.

Table A4-1

Occupations in Which Respondents Were Employed

I. White Collar

- A. Professional, Technical & Kindred Workers
  - Accountant
  - Architect
  - Computer Programmer
  - Engineer (electronic)
  - Life and Physical Sciences
    - Chemist
    - Personnel Worker
    - Therapist/Counsellor
  - Religious Workers
    - Clergyman
  - Social Scientists
    - Psychologist
    - Social Worker
    - Teacher/ College Professor
  - Technicians
    - Radio Operator
  - Writers, Artists, Entertainers
    - Actor
    - Editor, Reporter
- B. Managers and Administrators
  - Local Public Official
  - Restaurant Manager
  - Administrators, Other
- C. Sales Workers
  - Insurance Agent
  - Newsboy
  - Real Estate Agent
  - Unspecified Salesmen
- D. Clerical and Kindred Workers
  - Billing Clerk
  - Bookkeeper
  - Cashier
  - Counter Clerk
  - Dispatcher
  - Estate Appraiser
  - Expediter
  - File Clerk
  - Mail Carrier
  - Duplicating Machine Operator
  - Postal Clerk
  - Receptionist
  - Unspecified Secretary
  - Statistical Clerk
  - Storekeeper
  - Telephone Operator
  - Unspecified Clerical

II. Blue Collar

- A. Craftsmen and Kindred Workers
  - Baker
  - Bookbinder
  - Brickmason and Stonemason
  - Cabinetmaker
  - Carpet Installer
  - Electrician
  - Foreman
  - Inspector
  - Machinist

II. Blue Collar (continued)

- (Craftsmen and Kindred Workers)
  - Mechanic and Repairman
    - Airconditioning, Heating and Refrigeration
    - Autobody Repairman
    - Automechanic
    - Heavy Equipment Mechanic
    - Radio, TV Repairman
    - Railroad Mechanic
    - Mechanics' Apprentice
    - Unspecified Repairman
  - Painter
  - Sheetmetal Worker
  - Stationary Engineer
  - Telephone Repairmen
  - Tool, Die Maker
  - Unspecified Craftsman
- B. Operatives
  - Assembler
  - Clothing Presser
  - Gas Attendant
  - Producer Packer
  - Meat Cutter
  - Mixing Operative
  - Packer--non-produce
  - Photographic Worker
  - Drill Press Operative
  - Grinding Machinist
  - Sewer
  - Spinner
  - Unspecified Textile Worker
  - Welder
  - Miscellaneous Machinist
  - Unspecified Operative
  - Deliveryman
  - Truckdriver
- C. Laborers, Except Farm
  - Animal Caretaker
  - Carpenter's Helper
  - Groundskeeper
  - Longshoreman
  - Warehouseman
  - Miscellaneous Laborer
- D. Farmers, Farm Laborers
  - Farmer
- E. Service Workers, Except Private Household
  - Cleaning Service Workers
  - Charwomen, Cleaners
  - Janitor
  - Food Service Workers
    - Busboy
    - Cook
    - Dishwasher
    - Foodcounter Worker
    - Waiter/Waitress
  - Health Service Workers
    - Practical Nurse
  - Personal Service Workers
    - Recreation Attendant
    - Beautician
    - Babysitter
  - Private Household Workers
    - Private Cook
    - Housekeeper
    - Laundress
    - Servant
    - Other

CHAPTER 5

ACTIVITY, INFORMATION AND HELP-SEEKING BEHAVIOR

This chapter reports on how persons with reading limitations use their leisure time--what activities they take pleasure in, what interests and social contacts they have, what sources they use to get information and help, and what professional and lay help they utilize in their lives. Our reason for examining the leisure time pursuits of the population with reading limitations is that there is, we believe, a relation between how such persons choose to spend their leisure time and their potential reading interests; hopefully the former will serve as a guide to the latter.

In order to say anything illuminating about how persons with reading limitations use their leisure time, it is necessary to have a point of reference, namely the population at large, to which they may be compared. Thus, in the pages that follow we shall first devote considerable attention to the general trends in America pertaining to the use of leisure time, noting the points of similarity and dissimilarity between the segment of the population with print limitations and the nation as a whole, and then hone in more specifically on the activities and help-seeking behavior of this special segment of the population.

As we have seen earlier, persons with reading limitations are widely distributed throughout the national population, and largely participate in the same educational system and work situations as the general population. They also have access to television and radio in roughly the same proportions as the general population and are similarly influenced by these media and by trends in American life.

One of the hypotheses of this study is that the amount and kind of reading that some of the respondents do is a function of motivation and that motivation is positively affected by a person's knowledge of, participation in, and satisfaction with activities--whether they be solitary or social activities. A second hypothesis which also has bearing on the reading done by some of the respondents is that relative inactivity and isolation promote a heavy reliance on indirect means of communication such as television, radio and printed matter.

Though on the face of it these two hypotheses might seem to be inconsistent with one another (i.e., if one is true then the other cannot be true), in fact, they are not mutually exclusive. Rather, the two hypotheses actually complement one another; the first may be applicable to some of the respondents while the second may be applicable to others. And further, both of these hypotheses may be applicable to the same person at different points in his/her life. For example, at one stage in the life cycle a person may be heavily involved in activities which engender an interest in reading, while at a later stage he/she may be less socially active and may, therefore, be more inclined to spend time reading. Thus, both hypotheses are helpful tools in explaining the reading behavior of the respondents.*

ACTIVITY AND LIFE-STYLE

American adults, including persons with reading limitations, express considerable satisfaction with their lives. According to a 1976 poll by the National Opinion Research Center (NORC), 76% of the adult population said that they took a "great deal of satisfaction" in their family lives; 69% in their friendships; 60% in their health and general condition; 52% with their jobs; and 50% with their non-work activities (hobbies, etc.) (Social Indicators 1976, 1977, p. LXXVI).

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*Though at various points we speak of "the respondents" as if they were a homogeneous group, to see how these two seemingly contradictory hypotheses may both be true, it is important to keep in mind that the group is composed of individuals of different ages, incomes and educational levels, who assume different social roles and have unique personal needs, interests and motivations.

In a recent survey of 800 randomly selected persons who are unable to read print (Suhr and Berkowitz, forthcoming) 57% said that they were "very" or "quite" satisfied with their lives as a whole; 70% with their family lives; 50% with their social lives; and 50% with their use of spare time.

In the national population, persons of different stages and ages, socio-economic brackets, and racial groups are quite consistent regarding the degree of satisfaction they derive from their spare time activities, as well as some twenty other life concerns. Andrews and Withey (1976) found that on a scale of 1 to 7, where "1" means terrible and "7" means delighted, Americans rated "spare time activities" rather high (5.0 to 5.5), with the higher scores distributed among older persons. "Information and "media" received scores ranging from 4.1 to 4.7. In an earlier study of satisfaction conducted in 1971 (Campbell, Converse and Rodgers, 1976), 42% of the population said that leisure time activities were either "extremely" or "very important" to them: Leisure rated fourth after a "happy marriage" (1), a "good family life" (2) and "good health" (3). Leisure time activities are also important to persons with limitations in reading: 66% of the persons who are unable to see regular print said that getting together with friends or relatives was very or quite important, 37% said that watching TV was very or quite important, and 35% said that other leisure activities were very or quite important (Suhr and Berkowitz, forthcoming).

The place of reading as a leisure activity has altered considerably with the major changes in life-style since the second World War. Some of these changes have come about as a result of the increased amount of time available for leisure activities,* the suburbanization of our lifestyle, the increased participation of women in the labor force, the intellectualization of work, and the burgeoning of technological developments. In 1938, reading was the preferred way to spend an evening for more American adults (21%) than any other activity. Now it is vastly overshadowed by television. A national poll, conducted by Bruskin Associates in January 1979, found that the TV set was rated as the most important thing in the home (32%), compared to the stove (14%), which placed second.**

In another national poll conducted by the Gallup Organization in 1974, 46% of the adult population said that watching television was their favorite way to spend an evening. Only 14% said that they preferred reading to any other activity. In this same poll, the Gallup Organization found that after reading, the most desirable ways to spend an evening were: staying home with the family (10%), going to movies or the theatre (9%), playing cards and games (8%), visiting friends (8%), and listening to the radio (5%).

The activities that were mentioned by American adults as their "favorite way" to spend an evening (Gallup, 1974) reflect their overall leisure time budgets. As can be seen from the table below, one pronounced trend which emerges when the various "favorite" activities are divided into two groups, those that can be performed in one's own home and those that are out-of-home or community-centered, is that three quarters of the adults surveyed prefer either home- or family-centered activities. Given that our contemporary suburban styles of life and thought focus on life built around the home and family, this trend is not surprising. However, one consequence of this home/family orientation is that entertainment and community institutions are becoming increasingly less important as centers for leisure.

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* For example, in 1975 the employed man, on average, worked for pay about four hours per week less than he had in 1965 (47.4 hours compared to 51.3 hours), slept about the same (53 hours), participated in family care very slightly more (9.7 hours compared to 9.0 hours), and had about three more hours of leisure time (up to 36.1 hours). Married housewives also had three more hours of leisure per week (up to 44.3 hours).

** In this study which asked people to name the three most important things in their home, the refrigerator (13%) tied with the stereo for third place, and the bed and clothes washer (8%) each tied for fourth place (Broadcasting, April 9, 1979, p. 56).

Home-Centered/Family-Centered Activities	Percent of Persons Engaged in Activity
Watching television	46
Reading	14
Staying home with the family	10
Listening to the radio	5
Out-of-Home and Community-Centered Activities	
Going to the movies and theatre	9
Playing cards and games	8
Visiting friends	8

American adults (ages 18-65) on average spend 38.5 hours a week on leisure time activities (Robinson, 1976). Of these 38.5 hours, television occupies the largest single block of time--14.4 hours (43% of the total); 7.8 hours (20%) are spent visiting and socializing; 3.8 hours (10%) are spent at organization and club meetings; 3.8 hours (10%) are spent on media other than television, including radio, newspapers magazines and books; 1.3 hours (3%) are spent in recreation and sports; and 7.4 hours (19%) are spent on other leisure activities. (Bowling is by far the most popular sport.) Although there are variations by age, sex, race, etc. within leisure time budgets, the proportions hold roughly across these demographic groups. Non-whites, unemployed persons, female full-time homemakers, and older persons, however, all tend to watch more TV than other persons.

Since television has usurped the place of reading for many Americans in the past twenty years, it may be useful to examine some of the social trends that have occurred in the same span of time that seem to bear on the decline of reading, and the concomitant increase in television consumption in the general population, and to see if these same factors are operative in regard to persons with print limitations.

FACTORS AFFECTING THE USE OF LEISURE TIME

The Role of Television in Society

American adults currently spend, on average, over two and one-half hours per day in front of their TV sets (Bruskin, 1978). This is a 60% increase over the one and one-half hours spent in 1965, found by Ennis (1965). Surprisingly, as we shall discuss, persons who cannot see well enough to read regular print watch nearly the same amount of TV as sighted persons. Underlying this dramatic increase in the use of TV is near-universal ownership. At least one television set is found in almost every home (97%), and nearly half (47%) the U.S. households now have more than one set: thus, different household members can select their own preferred programs. (Sixty-eight percent have color television sets.)

Persons over 30 who are married or widowed/divorced, high school- or grade school-educated, and have low or middle incomes, tend to be the most frequent TV watchers, but a third of the more affluent, college-educated groups also prefer an evening of television viewing over any other activity. To spend an evening reading, by contrast, is only slightly more popular among the college-educated (19%) than it is among the grade-school-educated (17%); or among those with incomes over $20,000 (17%), as compared to those with incomes under $3,000 (12%). Thus, contrary to any preconceptions we might have about who watches television and who does not, there are not socially significant differences according to age, sex, education, income, employment, etc. (see Jackson, 1977).

Although there are occasional indications that Americans may be becoming slightly more selective about their viewing,* the most popular "prime time"TV programs in 1979 were situation comedies, variety shows, movies, "cops and robbers," sports and specials built around a big-name entertainer.** Viewing audiences as high as 80 million persons are not uncommon for television specials like "Roots" or professional football championships.* According to Neilsen surveys in which audimeters were attached to household TVs during 1978, the average household watched about six and a quarter hours of TV per day (Neilsen, personal communication).

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* In a national sample study of 2,500 adults, conducted by Bruskin Associates in December 1978, 28% said they were less interested in TV than they had been five years ago; 19% said they were more interested, and 49% couldn't tell much difference. A. C. Neilsen Co. found a decline of 6% in daytime viewing during 1977 as compared to 1976, but since then the number of homes using TV seems to have increased again (Broadcasting, April 9, 1979, p. 56).

** The most popular TV programming has not changed much over the past ten years. During the family viewing hours of 8-10 pm, sex and violence are usually kept to a minimum in hopes of limiting the negative influence on children. (The Surgeon General's Scientific Advisiory Committee in 1972 found that although TV violence had no uniform effect for most "normal" children, it did have an adverse effect on those children who had predispositions to aggression.) Soap operas, quiz and audience participation shows and occasional talk shows are geared to attract housewives during the day. On weekends, cartoons and religious programs take up Sunday mornings, and sports programs are aimed at weekend afternoon viewers.

The reasons for light content of programming that fills most TV time is related to a number of factors that tend to narrow the range of subjects and themes acceptable to a mass-produced culture. These include the fact that: a) the communications industry is dependent upon big business issues; b) an effort is made to avoid discussion of the many "sacred cows" and taboos of American society, such as patriotism; c) there is fear of offending ethnic and minority groups, religious groups, occupational groups, etc.; and d) the "fairness doctrine" requires an equal treatment of all sides of controversial issues.

As shown in regular Roper polls, most American adults consider television to be their primary source of news. Our study bears out this finding for persons with print limitations. TV news also appears to be the first choice among high school students, whether with print limitations or without (Atkins and Elwood, 1978). Both groups consider TV news more believable, more accurate and more timely than newspapers and weekly periodicals. This is expecially the case with Blacks and other low-income minorities, who are thought to use TV as both an agency of socialization and access to a predominantly white society that traditionally has ignored them and as a means of keeping up with the news (Strouse, 1975). TV may also be expected to be an important avenue to socialization and integration for many persons with reading limitations, especially older, less mobile individuals, who tend to be isolated or cut off from the mainstream of active society on account of their physical limitations.

In contrast to television and reading materials, radio usually serves as a background to other activities. Music was important in radio programming from the inception of broadcasting. According to the McGavren-Guild report of radio programming in the top 25 markets across the country, news accounted for about 6% of radio time and talk shows accounted for 5% in 1978. The bulk of the remaining 89% was in music (Broadcasting, April 23, p. 56). On the typical station, five-minute news summaries and one-minute capsules of the news, mainly taken from wire services, intersperse music. (As we shall see, persons with reading limitations are heavy radio listeners, and consequently, heavy music listeners.)

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* Typically, some 64% of American homes are tuned in to their TV screens during the "prime time" hours (8-10 pm); on weekdays, 25% are tuned in during the 10 am to 1 pm slot, and 32% from 1 pm to 4:30 pm. In January 1978, the eight-day telecast of "Roots," the saga of black America's history, was the most widely viewed program ever: it reached 36.4 million homes.

Advertising and business interests aside, the sources and inspirations for the establishment of television as a core of American life are not clear cut. Two possibilities that suggest themselves immediately, however, are: TV's role as an inexpensive and comfortable family activity, and the desire for entertainment and relaxation to provide relief from the more mentally taxing and energy-demanding work activities. The former possibility is consistent with the emphasis that Americans and, as we have noted, print-limited persons place on the home.* The fact that television is a family activity may be particularly significant for families that include persons with reading limitations, for whom the range of activities that everyone can participate in together may be more limited. One consequence of this situation is that those family members who otherwise might read to or with the member with print limitations may not be available to do so because they are busy watching television.

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*This is true in spite of the current high divorce rates. By 1970, nearly 60% of all new marriages ended in divorce, with remarriage in about 70% of current divorces (Social Indicators 1977, p. 67).

Employment Factors Affecting Reading Behavior

Greater Labor Force Participation of Women--The choice of television as a source of entertainment in the evening is also consistent with trends toward greater participation of women in the labor force and the intellectualization of the work day.* In 1954, slightly over a third of the women 16 years and over were in the civilian labor force; by 1974 almost one half were working or looking for jobs. Overall, two women are in the labor force now for every three men. But among younger persons, there are four women working for every five men, and this trend is expected to continue (U.S. Department of Labor, 1975). Because of the increased participation of women in the labor force, and especially in white collar positions, there are now many households in which both adult members of the family unit come home from work fatigued and ready for a relaxing evening. Thus, where there used to be a preponderance of households in which only one of the adults was working and the other was able to organize entertainment for his/her spouse in the evenings, now, with so many dual-career households, it may be easier and less tiring for both adults to rely on the television as their source of entertainment. Such trends also pertain to working adults who have reading limitations. See Chapter 4 for further details.

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* While women are spending a growing proportion of their adult lives in the labor force, men are working less. Between 1950 and 1970, the average length of the expected working life of men 20 years old fell from 42.6 years to 41.5 years, while the expected retirement increased by over two years. Between 1950 and 1975 also, the average weekly hours of work in the civilian economy dropped by nearly three hours. Thirty-one percent of plant workers and 80% of office workers now get at least two weeks of paid vacation after a year of service compared to 21% and 76% respectively in 1959-1960. (U.S. Department of Labor, Bureau of Labor Statistics, 1975; Monthly Labor Review, 1976.)

Intellectualization of Work--A second important trend is the change in the kinds of jobs that are available. White collar jobs have increased significantly relative to blue collar employment: the white collar jobs now account for half of the employed work force. Since 1960, the average annual increase in professional and technical workers has been 3.6% and the average annual growth in clerical positions has been 3.0%. These occupations generally require more concentration and more reading than do service, operative and private household positions (U.S. Department of Labor, 1978).

Not surprisingly, this increase in the number of white collar jobs corresponds to an increase in the general level of educational attainment in the country. Since the 1940's, formal education through college has become the norm: 62% of the male and 53% of the female high school graduates entered college in 1974-75 (U.S. Department of Labor, 1976). Although it is not clear how many Americans take work home from their jobs to do at night, this is probably on the rise in our increasingly complex technological society. When people finally have the opportunity for leisure at the end of the day, they seem to seek exactly the kind of non-demanding input provided by television, in order to feel rejuvenated and ready for hard work the following day. As we have shown, persons with print limitations have nearly comparable rates of blue and white collar employment in the nation as a whole, and similarly tend to seek the same kinds of non-taxing relaxation activities.

It is perhaps a paradox of American life that a population that has a higher educational attainment than ever before chooses non-intellectual leisure activities as its favorite. The turning away from intellectual activities during leisure time seems to have a correlate in the choice of non-leisure activities as well. After a period of interest in studying the humanities in the university, many college entrants are now turning to more practical disciplines. Some of America's disenchanted youth, however, are disturbed by the fact that ideas and learning are not taken as serious pursuits in and of themselves.

Influences Affecting Children's Reading Habits

There is little doubt that parents who spend relatively little time reading for pleasure and information, barring the job-related reading they do, set an example for their children to do the same.*

Another factor which may affect children's reading habits is the increasing amount of family instability. This may contribute to a less structured and less happy home atmosphere, from which children seek escape. The rate of all children under 16 years old not living with both parents rose from nine percent in 1960 to 17% in 1975 (Social Indicators 1976, p. 67). Among a range of home activities which may be excluded as a result of the breakdown of the home is reading.

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* A key problem appears at the secondary school level when children are becoming more independent. On international achievement tests given to 14 year old students in 1970, the U.S. ranked about average in mathematics, science, reading comprehension and literature. But final year secondary students rank near the bottom after students from France, Germany, Italy, Japan, The Netherlands, Sweden and the United Kingdom (Social Indicators, 1976, p. 315).

We know of no studies of family instability among persons with reading limitations, but there is considerable anecdotal knowledge that marriages of adventitiously blinded persons are placed under severe stress at the time of the onset of the limitation and often do not survive.

Aging

One of the most important trends of mid-20th century America is that society is growing older. With birth contraception and abortion readily available, the average annual population growth dropped from 1.71% in 1960 to 1.26% in 1970, and is expected to continue to decline (Social Indicators 1976, p. 22). And the general population, now receiving better health care, grows older and grayer. In 1950, 8% of the population was 65 years or older; by 1970, the rate had risen to 10%, and it is expected to reach 12% by the year 2,000 (Social Indicators 1976, p. 24).

During aging there is a normal slowdown or deterioration of physiological functions that results in reduced participation in energy-demanding activities, and reduced capacity to perform sedentary activities such as reading with vision deterioration, or to hear the higher frequency music and voice tones with auditory losses. With containment of federal health care outlays being given a stronger push, alternatives to long-term institutionalization of most of the nation's elderly are being viewed seriously. As part of this thrust, the 1978 amendments to the

U.S. Rehabilitation Act of 1973 now provide funds to train elderly blind persons in skills of independent living, including communication and reading techniques.

Suburbanization

With the gradual flight of younger persons from the central cities to the suburbs, and with greater occupational mobility leading to shifts in jobs and regions, many older persons are distant or isolated from their families, and are strangers in their own communities. "Automobile living" in the suburbs means that many persons, especially the school-age and elderly populations, are virtually dependent on others to get from place to place. Some of the respondents reported that going to the library or post office to collect or return large packages of braille or recorded reading materials is quite troublesome when it has to be coordinated with other people's schedules. Similarly, homebound respondents from urban communities--where mailboxes tend to be small--indicated that receiving oversized packages is problematic, and depends in large part on whether the local mail carriers are willing to deliver the packages to the individuals' doors.

Living Alone

More persons are living alone than ever before (9% in 1975, compared to 6% in 1960). Many of these persons are elderly: as many as 30% of the persons over 65 years live alone: 15% of the males above 65 are living alone and 38% of the females above 65 do not live with others; this difference in the number of males and females residing by themselves in part reflects the greater life-span of women (Social Indicators 1976,

p. 22). More people are living on low retirement incomes with no household members to share the economic and psychological burdens of living in an inflationary, consumption-oriented society that does not like to think about growing old, becoming sick or dying. As we have seen, many of the print-limited are similarly affected by these trends, and as a result may have relatively less help than is necessary to read as much as they would like.

Lack of Confidence in Institutions and Public Services

Finally, Americans have turned inward and are now more distrustful of government's capacity to successfully accomplish positive ends. In 1976, only about one out of seven persons said that they had a "great deal of confidence" in the Executive Branch (19%) or in Congress (13%): 30% of the registered voters who did not vote in the 1974 elections said they were not interested or did not believe that their votes would matter, and 40% of the eligible persons who did not register to vote reported in 1974 that they were not interested. Participation in the political process, as reflected by voting in the Congressional and Presidential elections in the 1970's, is down to its lowest point since World War II and in some cases the lowest point in United States history (Statistical Abstract of the U.S., 1978, p. 520). Poor and less-educated whites have been dropping out of the electorate at greater rates than any other group, suggesting that they do not perceive a sufficient payoff to vote (Reiter, 1979).

This lack of interest in government and its institutions, reflected by the declining interest in voting, is also thought to be a factor in declining newspaper readership, for the simple reason that both reading a newspaper to keep up with political and social events and voting in local and national elections depend upon one's having an interest in the society one lives in and the institutions which influence the quality of life in that society. In fact, the connection between voting and reading a newspaper may be even stronger than that stated above; it would seem that in order to have a stake in the outcome of elections one must be aware of the political and social events of the day, and one of the primary means of becoming aware is, of course, by reading a newspaper. And conversely, the more confidence one has in how much one's vote matters, the more likely one will be to keep abreast of the news.

Another manifestation of this lack of confidence in public services and institutions is the fact that the American people, after costly, abortive attempts to alleviate poverty and its associated ills in the 1960's and early 1970's, now seem devoted to a more frugal policy of collecting and spending tax dollars.* Persons with reading limitations who do not wish to be labelled and, therefore, stigmatized for accepting public services, not only participate in these trends but are also the target of the move toward fiscal frugality.

Instead of participating on the national level, there seems to be a return to local and grass roots concerns, with a growing trend since the late 1960's to volunteer in community and social activities and to participate in formal organizations (Taub, et al., 1977). Twenty-four percent of the population above 13 years of age reported that they had volunteered for some social activities in 1974, compared to 18% in 1965 (Social Indicators 1976, pp. 549-550). The development in the past ten years of special radio services for persons who have limitations in reading regular print is part of this movement toward volunteerism and local participation. Called Radio Reading Services (RRS), these services concentrate on providing readings of local newspapers and magazines by volunteers. Funding is also largely obtained from local community groups through a few municipalities and states providing stipends. The National Library Service--both in the national office and at the various regional and subregional libraries--also regularly benefits from the work of thoosands of volunteers who regularly come forward to help.

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* Approximately 60% of those registerd voters in California who were favorable to Proposition 13 (the Jarvis-Gann initiative) voted in November 1978 to lower business and residential property taxes to no more than one percent of market value. They said they were most concerned about cutting out government waste, cutting out needless programs and letting the politicians know that they can't do anything they want. A significantly lower percentage were concerned about taxes being too high or inflation. Proponents of the bill neither expected that there would be a rise in income taxes nor that cuts in services would result. And they proved correct after Proposition 13 was passed (Los Angeles Times, June 26-29, 1978).

Religion

The 1970's have seen a strong reversal of the sharp decline in religious influence that came about in the 1960's. Half of the sample of adults polled by Gallup in 1975-76 said that they felt a "great deal of confidence" in organized religion, and that their religious beliefs were very important to them (Social Indicators 1976, pp. 552-53). This trend suggests a renewed interest in reading the Bible and other religious materials. These materials are similarly important to our target population.

Psycho-social Factors

In attempting to explain the gross appeal of mass media communications, Horton and Wohl (1956) suggested that the advent of radio and television has created a new form of social interaction--in an alienated society--of intimate relations at a distance, in which audiences react to mass media performers and the characters they portray as if the communicators or characters were part of the audience's peer group. In this form of interaction, which Horton and Wohl call "para-social," audiences experience the illusion of face-to-face primary relations with remote communicators. The communicators take on the attributes of "perfect" role-partners, in that their stylized behavior is highly predictable. And the audiences invent an affective tie to the communicators, identify with and benefit from the communicators' difficulties, mistakes, wisdom, advice and life activity. For people with reading limitations who have weak social ties, para-social interaction may offer an especially attractive alternative to their inadequate opportunities for personal/social interactions.

Technological Factors

As certain types of human labor have been rendered superfluous by technological advances, the average work life-span has decreased. One consequence of the declining and more flexible work week is that there is now more unplanned time for activities unrelated to one's job.

The form in which free or leisure time is presented (an extra half an hour a day, or longer vacations and three-day weekends) is significant in determining what can be done with one's leisure time. Book reading, for example, rises sharply when people are on vacation, and TV use declines. The availability of large blocks of time makes it easier to travel and do special projects.

For many people, technological advances have also had an effect on the kind of activity that will be performed in any given area of interest, though not on the amount of time spent. To illustrate, the recent fad of purchasing food processing equipment which enables one to cook faster appears to have diverted people's attention from actually preparing the food to finding and reading new recipes which can be made with the processors. Thus, while technology has, on the whole, given rise to more leisure time, the areas of interest people devote their time and energy to have remained more or less the same.

One exception to this homeostatic conception of how people spend their time, however, is television consumption. Television usership has increased by a half an hour a day since 1965 (while reading has declined) across most demographic groups.* Technological innovation resulting in the production of multiple TVs, color TVs, cable TV and video cassettes, does not explain all of the growth in television watching, however. The fact that relatively little has changed in the format in which the daily newspaper is presented, while there has been a preponderance of more entertaining news programs may be more significant.

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*The expanding rates of television usage are particularly prevalent among persons of higher social status, indicating a blurring of class distinctions in the television audience (Robinson, 1979).

The effects of technological innovation in the past 20 years, such as the reduction in the speed of talking book discs, the four-track layout of audio cassettes and the computerized production of braille, have significantly altered the accessibility of print alternatives for persons with reading limitations, and are expected to continue to do so even more in the future. Braille, the traditional way of reading for the blind, is now being produced by computer translation in a more timely way. It is expected that compositor's magnetic tapes used in preparing print books through computerized type setting will be available for translation to braille, large type and synthetic speech in the near future to reduce the time interval between the time a book or magazine appears in print and the time it is available for persons who are unable to use regular print. Within only the past three years, two significant developments have appeared on the market place that may be expected to affect the reading activity of persons with limitations in using print; these are paperless braille--braille on magnetic cassettes--that is read tactually on a device that looks like a tape recorder, and machines that scan and read aloud in synthetic speech print materials that are prepared in standard format.

ACTIVITIES OF OLDER/DISABLED PERSONS

How persons with reading limitations occupy themselves is one good guide to their potential reading interests. Few studies on the use of time by able or disabled persons are available, however, for comparison to the findings obtained on the daily activities and interests of adults in the general population. Most national studies concentrate on how working age adults (16-64 years) spend time and do not deal specifically with retired or disabled persons.

The diaries kept by older persons cataloging how they spend their days suggest that they do fewer things than younger persons. Technically speaking, we might say that older persons use their time less efficiently than younger persons. It appears to take them more time to eat, to get about from place to place, to care for themselves, and to do household chores. Consequently, there is a constriction of the number of different activities that are performed. This same phenomenon appears to occur with disabled persons; in fact it is probably somewhat intensified with the latter group.

One recent national study which did examine the use of time of all American adults is the 1974 Harris poll of 4254 persons 18 years of age and older. In this study, Harris (1975) found that older persons (65 years and over) are no more nor less likely to spend "a lot of time" on a number of the leisure pastimes examined than persons under 65 years of age. Although the concept "a lot of time" was not operationally defined, about the same percentage of young

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and old persons said that they spend "a lot of time" "reading" (about 36% of the group 65 and over say they spend "a lot of time in this activity"); "sitting and thinking" (31%); "gardening or raising plants" (39%); "going for walks" (25%); "sleeping" (16%); "participating in fraternal or community organizations or clubs" (17%); "doing volunteer work" (8%); and "participating in political activities" (6%).

However, some relevant differences in the overall use of time were found by Harris. Older persons tend to steer away from activities requiring substantial expenditures of energy and to content themselves with more sedentary activities. For example, older persons were found to spend somewhat more time than younger persons watching television (13% difference in spending "a lot of time"), and "doing just nothing" (6% difference). In contrast, younger persons were found to spend substantially more time caring for younger or older members of the family (26% difference), "working" (41% difference), "participating in active sports like golf, tennis or swimming" (19% difference), and "participating in recreational activities and hobbies" (8% difference).

Using elements of Maslow and Lewin's theory of motivation, Kuhlen has effectively made the point that there is a shift in goals and a change in interests as people move through their older years. (A similar phenomenon would seem to occur with persons who have physical limitations.) This shift in orientation comes as the result of a person's experiencing varying degrees of frustration and success in satisfying a hierarchy of needs for food, clothing, shelter, sex, achievement, power, creativity, self-actualization, affiliation, service, etc. When an individual cannot achieve a desired goal, for example, holding a pot to cook a meal, he/she may behave as if cooking and related activities like shopping and reading food advertisements and recipes are no longer important activities. This is reflected in the fact that the individual will turn to other activities as sources of satisfaction.

Thus, we often see a shift in gratifications obtained through vigorous direct activity to gratifications obtained in more passive, indirect and vicarious ways with aging and with the onset of physical impairments. If the individual's original interest in an activity was a strong one, he or she may shift to related but more passive activities within the same general interest area. For example, instead of playing sports, the individual may turn his/her attention to watching sports and reading about sports figures.

There appears to be an obvious connection between Harris' findings on how older persons use their time and Kuhlen's thesis. While above we said that older persons generally tend to steer away from taxing, energy-demanding activities, what is perhaps a more apt way of putting it, in light of Kuhlen's point, is that older persons (and persons with physical disabilities) tend to eschew more and more activities as they become increasingly frustrating to perform with age.

The shift away from active participation with age points to the fact that as a society we do not yet make age-specific accomodations in the organization of, or the equipment designed for, work, travel or recreation. That is, we do not avail older persons of opportunities which are appropriate to their age, health, and level of disability. For example, we do not raise the net on tennis courts to slow down the game, or make lighter bowling balls, or add a 55 plus year category to a variety of tournaments. The same is true of reading: nationally the large print editions of The New York Times (weekly) and Reader's Digest (monthly) are the only regular periodicals which take into account the physiological changes that accompany aging.

Clearly such age-specific accomodations are in order. Since older persons do spend "a lot of time" reading, the activity of reading ought to be made as comfortable and easy to perform for older persons as it is for younger persons, particularly, since older persons can only read about many activities they once could actively participate in.

ACTIVITIES OF PERSONS WITH READING LIMITATIONS

As an indicator of how active the respondents were, their participation in the past month in, and their satisfaction levels with, eight common activities were explored. The activities were of several types:

A. At home activities

   1. cooking a meal

B. Out-of-home activities

   2. going shopping

   3. going out--like to dinner or a movie

   4. walking for pleasure

   5. going to church or religious services

C. Social activities

   6. playing games like cards and board games

   7. attending meetings of clubs or organizations

D. Quiet personal activities

   8. reading or listening to a newspaper, magazine or book.

The factors governing the participation rates in these activities relate not only to the respondents' reading limitations, general health and mobility, but also to their family composition and their social role(s) within the household.

As seen in Figure 5-1, some activities seemed to be more pleasurable than others. Going to church (57%) and reading (53%) were activities which a majority of the respondents said they "enjoyed a lot." Playing games like cards and scrabble (32%) and attending meetings (26%) were activities that they reported "enjoying a lot" to a lesser extent.

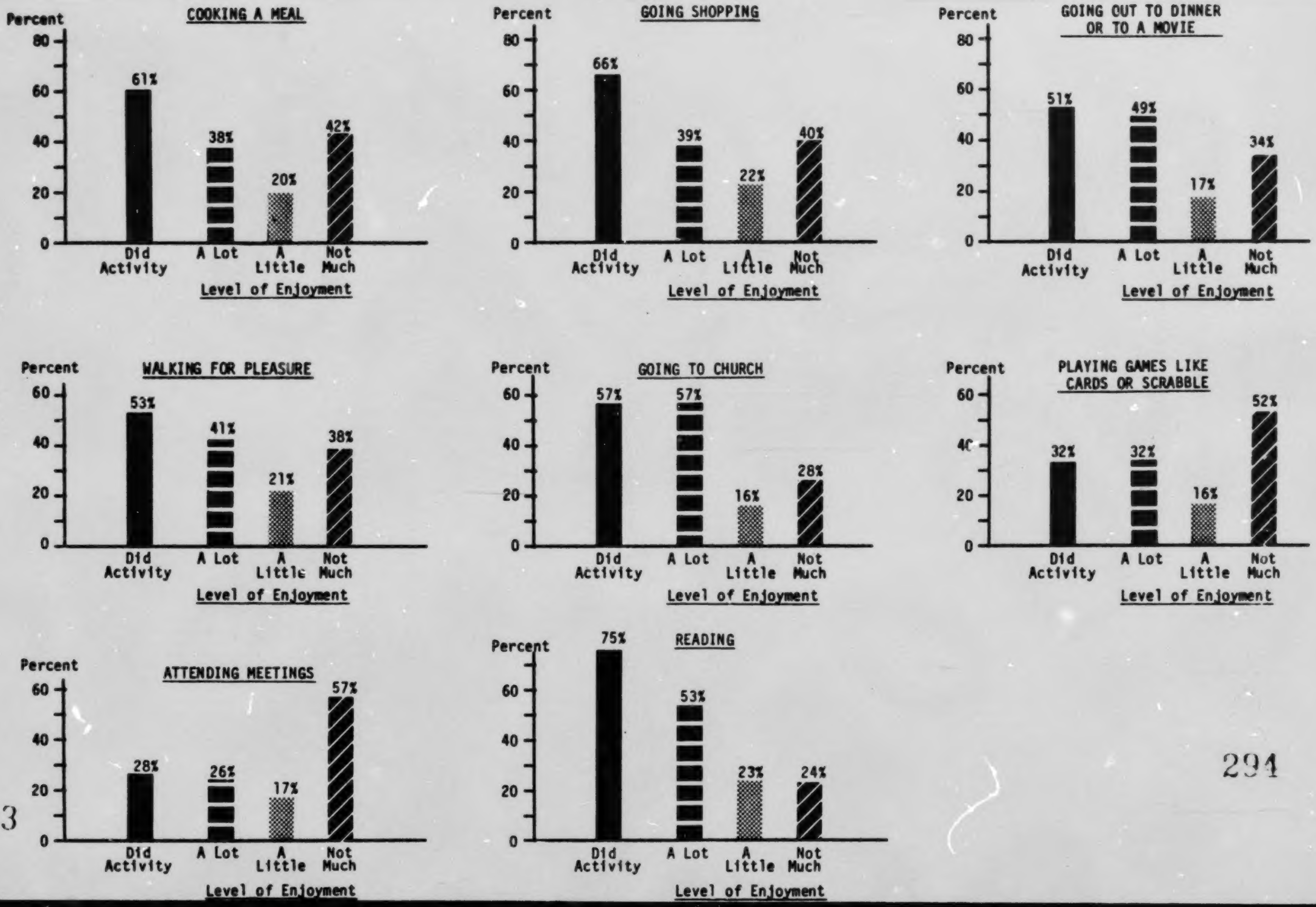


Figure 5-1

Satisfaction With and Performance in Past Month of Common Activities

Clearly, some activities are more essential than others. Preference is, therefore, only one element that enters into one's decision of whether to perform an activity. Necessity, as reflected by one's household situation, is important too. Thus, many people went shopping (66%) or cooked a meal in the past month (61%), although they reported that they did not take a great deal of pleasure in it.

Reading is an important activity for most respondents. By far, more people (75%) read or listened to a newspaper, magazine or book in the past month than any of the other activities examined.

Overall, we found a high correlation between the respondents' actual participation in the eight common activities examined and how much they said they enjoyed the activity. The statistical correlation levels (the Pearson Correlation coefficients -r- as shown in Table 5-1) between the enjoyment of an activity and the doing of it in the last month ranged from r=0.47 for shopping to r=0.68 for playing games. (Recall an r of 1.00 represents a perfect positive association.) In this instance, behavior seems to coincide with stated attitudes. Few individuals said that all activities are equally pleasurable, reflecting their ability to discriminate between the activities that give them pleasure and those that do not. In only a few cases did the enjoyment of one activity (or the lack of it) correlate highly with the enjoyment

Table 5-1

Statistical Association Between Enjoyment and Actual Doing of Activities

ACTIVITY	Pearson Correlation Coefficients Between Reported Enjoyment of Activities and Actual Doing of Them in the Past Month -r-
At Home Activity	
Cooking a meal	0.56
Out-of-Home Activity	
Going Shopping	0.47
Going Out--like to Dinner or a Movie	0.59
Walking for Pleasure	0.66
Going to Church or Religious Services	0.64
Social Activity	
Playing Games like Cards or Board Games	0.68
Attending Meetings of Clubs or Organizations	0.65
Quiet Personal Activity	
Reading	0.48

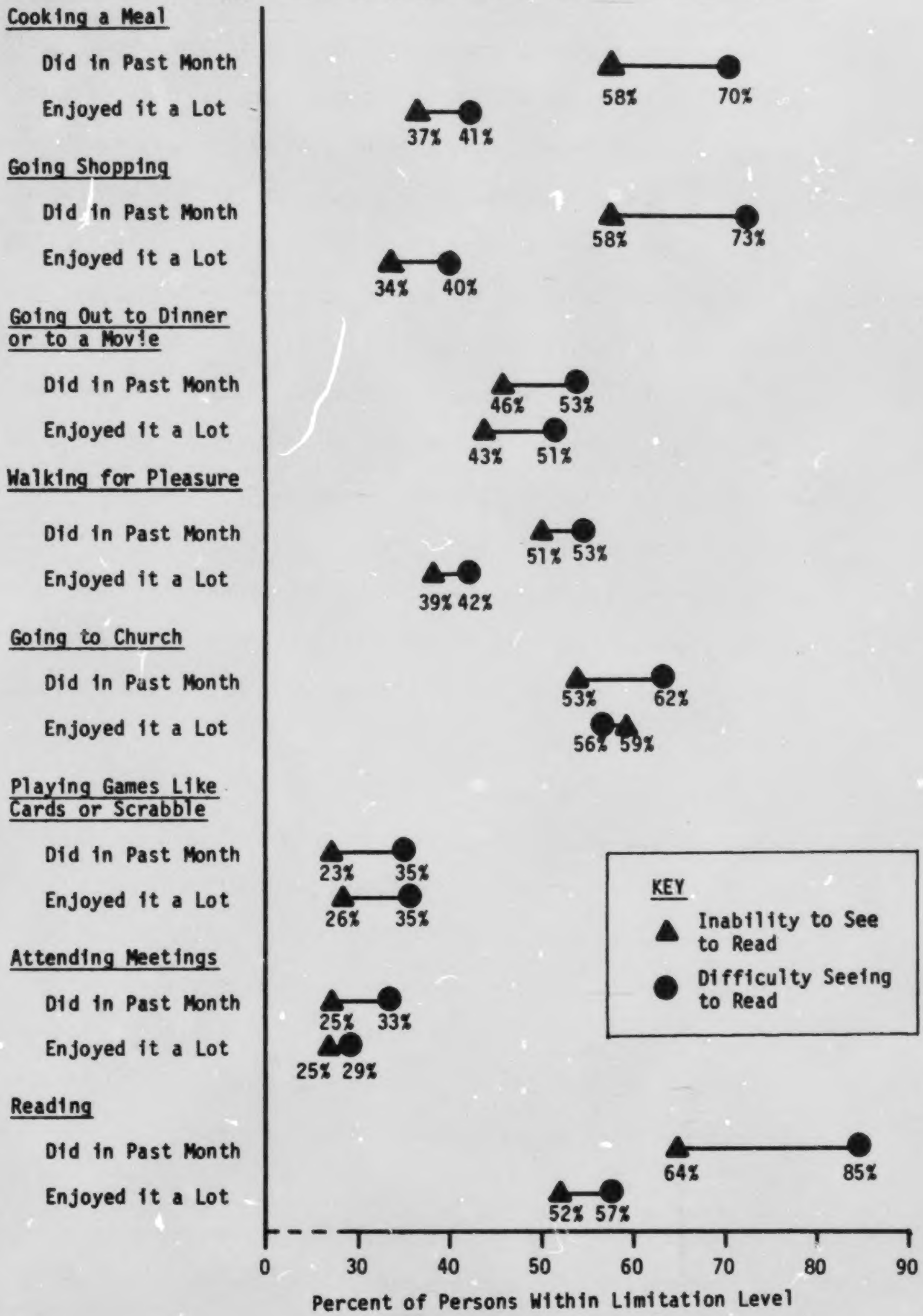
of another activity. These activities were usually similar or associated: for example, a) shopping, cooking and walking, b) attending meetings and going to church, or c) going out and playing games.

We have made the point that with respect to the general public, a model of activity in which time and money are taken to be major constraints does not seem to hold. Rather, an opportunity model, where opportunity is understood to refer to the availability of appropriate facilities, help and equipment, seems to be more applicable for many people. However, this may not be the case for the sector of the population that has health and mobility limitations, of which persons with reading limitations form a large part. A lack of money and appropriate opportunities conspire against this group. Adequate equipment (i.e., equipment designed with human factor considerations in mind) to fully accomodate their needs is scarce. It is therefore not surprising that the extent to which the respondents performed activities, and the pleasure they took in the ones they did perform, appears to be associated with both the set of limitations that people have and their severity.

For persons with severe health and mobility limitations there simply are not adequate facilities, equipment or assistance, and consequently, such persons are not likely to be among the persons who are happily and busily engaged in activities. To illustrate, participation levels were lower for persons who were unable to see to read than for those who mentioned only having difficulties seeing (see Figure 5-2). And similarly, when persons of the same age group were considered, participation and satisfaction rates generally declined with the number of reading

Figure 5-2

Satisfaction With and Performance in the Past Month of Common Activities By Persons With Limitations in Seeing Print By Level of Limitation



compounding limitations. To illustrate, 73% of the persons who had only seeing problems cooked a meal during the last month, compared to only 57% of those individuals who had a physical limitation in addition to a problem seeing (see Table 5-2). Mobility, hearing and health problems also tended to reduce activity levels in a similar fashion.

Social, Demographic and Health/Disability Correlates of Activity

The activities that the respondents perform and the degree of pleasure that they take in them is associated with their age, education and income, as well as the set of limitations they have and their severity. Sex, race, region and urbanization of place of residence and other variables like certification of legal blindness were not related to activities performed or enjoyed. (The size and direction of correlations is presented in Table 5-3 and Figure 5-2.)

Table 5-3 shows the association or variation of selected predisposing, enabling and disability factors with activity. It is read as follows: a "W" means a weak variation of ±5-10% in the activity associated with the factor, a "M" means a moderate ±10-20% variation, and a "S" means a strong variation of greater than ±20%. A minus sign with the W means the association is negative: for example, W- in the first column means that older persons tend to enjoy activities less than "all respondents" by 5-10%--a weak association. A positive sign, as in the fourth column (education), where S+ is opposite "Have Interests or Hobbies," means that better-educated persons tend to have hobbies more frequently than "all respondents" by over 20%. And finally, a blank in the table indicates that there is no association between the factor and the activity in question.

Age

Age is only a weak to moderate predictor of activity and enjoyment

Table 5-2

Satisfaction and Participation in Selected Activities By Reading Limitation Typology

SELECTED ACTIVITIES	All Persons	Reading Limitation Typology						
		Single Limitation			Multiple Limitations			
		Seeing Only	Learning Only	Physical Only	Seeing & Physical	Seeing & Physical & Learning	Seeing & Learning	Physical & Learning
COOKING A MEAL	Percent of Persons With Type of Reading Limitation							
Enjoy a Lot	38	42	29	37	38	35	35	26
Did Last Month	61	73	52	47	57	55	62	49
READING								
Enjoy a Lot	53	61	35	61	51	52	44	41
Did Last Month	75	81	79	85	66	29	79	75
GOING SHOPPING								
Enjoy a Lot	39	39	51	43	32	39	42	53
Did Last Month	66	73	84	61	55	57	77	77
GOING OUT								
Enjoy a Lot	49	52	71	45	41	43	51	66
Did Last Month	51	58	72	46	37	45	60	65
PLAYING GAMES								
Enjoy a Lot	32	33	49	27	25	31	39	35
Did Last Month	32	32	62	35	22	25	45	49
ATTENDING MEETINGS								
Enjoy a Lot	26	29	23	26	22	29	31	23
Did Last Month	38	33	31	24	22	28	32	31
WALKING								
Enjoy a Lot	41	45	50	33	33	38	48	43
Did Last Month	53	58	76	35	44	47	65	68
GOING TO CHURCH								
Enjoy a Lot	57	62	44	55	56	55	56	45
Did Last Month	57	66	66	44	49	48	66	62
Overall Measures								
Mean Number of Activities Enjoy a Lot	3.34	3.65	3.52	3.24	2.98	3.27	3.45	3.32
Mean Number of Activities Did Last Month	4.67	4.67	5.15	3.70	3.50	3.65	4.81	4.64
Weighted Sample Size	(7077)	(2388)	(473)	(339)	(1880)	(1164)	(636)	(197)

*Sample Size is for satisfaction, sample size for doing is slightly less.

Table 5-3*

Association of Selected Factors and Activity

	Weighted Sample Size	Age	Sex	Race	Education	Income	Region	Urbanization	Living Situation	Family	Mobility	Health	Reading Limitation	Legally Blind	Hearing
		Older are	Males are	Non-Whites are	Better Educated are	More Affluent are		Metropolitan Areas are	Those Alone are	Family of Disabled are	Less Mobile are	Least Healthy are	Most Severe are	are	Poorer Hearing
PARTICIPATION IN COMMON ACTIVITIES															
Number of Activities Enjoyed a Lot (0-8)	(7077)	W-	W-		W+	W+				W	M-	M-	M-		W-
Number of Things Actually Done Last Month (0-8)	(6127)	W-			W+	W+			W-	M+	M-	M-			
HOBBIES OR INTERESTS															
Have Interests or Hobbies	(7199)	S-		W-	S+	S+	S(W-)				S-	S-	S-		M-
Specific Interests or Hobbies															
Sports/Recreation	(1012)	S-	S+			M+			M-	M+	S-	M-	M-		
Household	(706)	M+					S,NC(M+)	M-	M+	W-		W+	M+	W-	
Making Things	(1314)		S-			M-				M-	M-				
Arts & Leisure	(536)	W				W+		W+	W+		M+		M+	M+	W-
Social	(272)	W+			M+				W+						
Reading	(300)											W+	M-		W+
Religion	(183)										M-				
SOCIALIZATION															
Number of Times per Week Visited With or Talked to Persons Outside the Home	(6941)		W-						M+	W-	W-		W-		
MEDIA USE															
Hours Watching Television	(6987)	M+			W-	W-			W+		W+	W+		W-	
Hours Listening to Radio	(6774)												W+	W+	W-

Key:

S = Strong -- greater than 20 % points variation.
M = Moderate -- 10-20 % points variation.
W = Weak -- 5-10 % points variation.

*Information on how to read this table is given on p. 257.

levels for the eight activities examined here. We see in Figure 5-2 that as age increases, participation and stated pleasure vary in a regular way for some, though not for all, activities. Reading or listening to newspapers, magazines or books is one of the activities for which a regular decline is observed as people become older: 82% of the persons 6-44 years read in the past month, whereas 76% of the persons between the ages of 45-64 read in the past month, and only 70% of the persons 65 years and over did any kind of reading. This finding seems to support the first hypothesis, namely that reading is affected by participation in activities: as people age they tend to slow down a bit and to participate in sports and strenuous leisure activities less often, which may result in a reduced interest in reading about the activity.

Activity levels also indicate that physiological changes associated with aging are highly individualistic. Many undesirable changes can be mitigated and are amenable to medical, surgical and psychological intervention. Stereotypes of the onset of senility are largely exaggerated (Butler and Lewis, 1972; Eisdorfer and Lawton, 1973; and Botwinick, 1977) and what are taken to be symptoms of senility are often only the effects of vision loss or the lack of surety of step (Snyder, Pyrek and Smith, 1976).

In a study of how American adults use their time, Robinson (1976) showed that the number of hours per week spend on family care and personal care increases as working age people get older; for example: 20.8 hours per week were spent on personal care by 26-55 year olds, compared to 26.6 hours by persons 56 to 65 years old. Most of these persons were not retired or disabled. For some frail, elderly individuals and other persons with severe physical impairments, coping with the fundamental activities of daily life requires such great expenditures of physical and emotional energy that they are left with little time and strength to concentrate on activities like reading. Activity participation may vary with the individual's sex, the necessity for the activity, and whether there is help in the home, etc., as well as the individual's age.

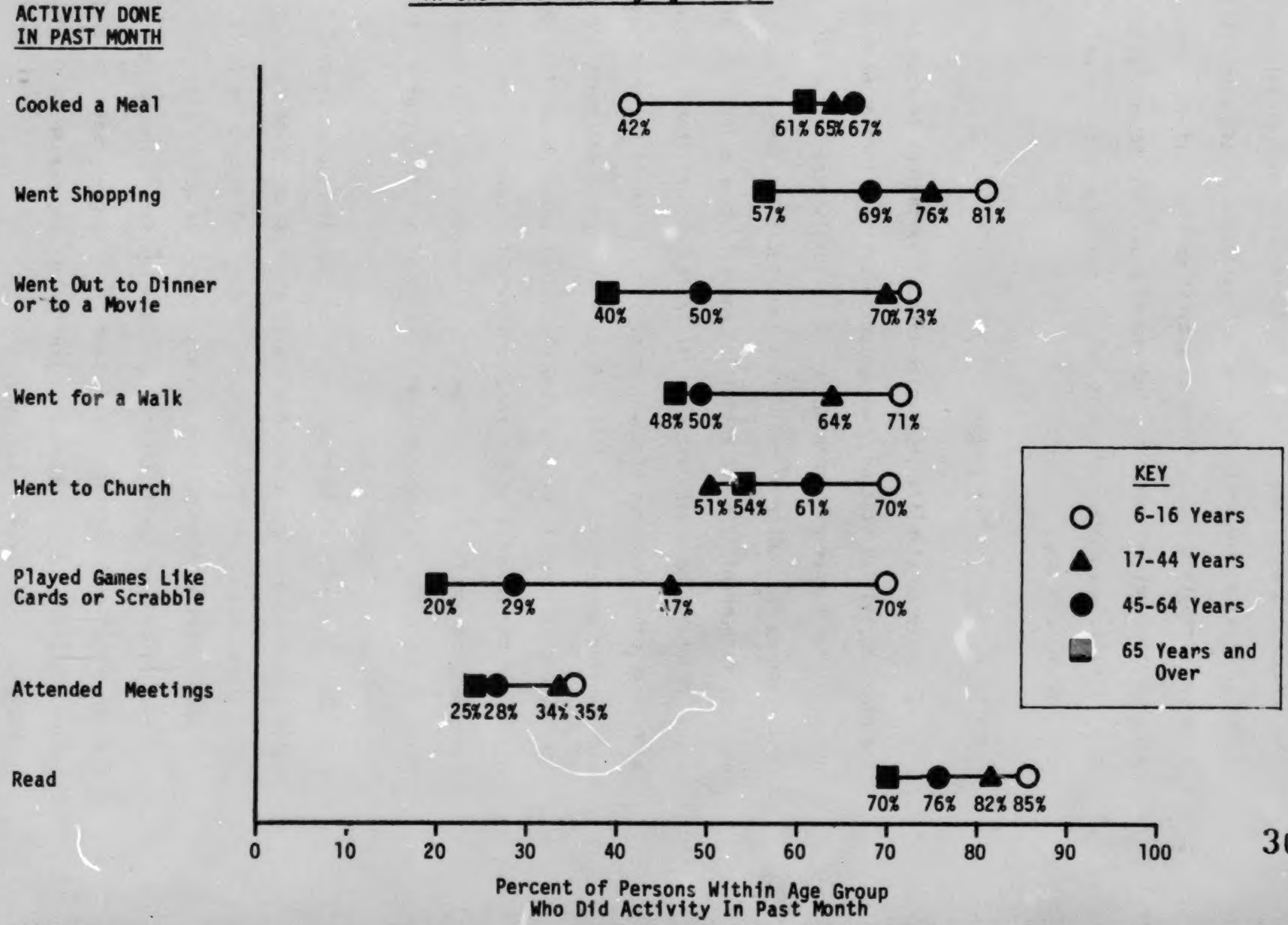
Activity and Satisfaction Indexes

In order to simplify the explanation of variations in each of the eight activities studied, two aggregate activity indexes were prepared: 1) the number of common activities actually done in the last month, and 2) the number of activities reportedly "enjoyed a lot." On average, respondents did 4.2 activities and said they enjoyed 3.3 activities "a lot." These data are given in Table 5-2, and then in Table 5-3 along with other measures of involvement in relation to the predisposing and enabling variables. Analysis of the activity and enjoyment scores shows these measures to be more strongly associated with mobility, general health and the severity of the reading limitation than with any of the demographic or social factors. There is a variation of 10-20 percentage points between the highest and lowest levels of participation and the most and least severe limitations.

Activity and satisfaction seem to be closely related to social roles (see Figure 5-3). Individuals with the busiest lives (working, going to school) report that they both do more and enjoy more fully the things they do than persons who are retired or not working for reasons of poor health/disability. Greater family incomes and greater educational attainment also seem to influence greater participation and enjoyment, but the variation is less pronounced (5 to 10 percentage points) across the range.

Figure 5-3

Performance of Common Activities in the Past Month by Age Group



Overall, the variation in the activity indexes is consistent with Josephson's findings for the blind (1968). Persons with the highest scores seem to be more fully exploring opportunities for an active life--belonging to organizations and attending meetings, going shopping, cooking and socializing while playing games. Persons with the lowest scores rely on others for assistance in moving about or are confined to their homes or beds, tend to be older, are more prone to being hard of hearing, have less money and education, and more frequently live alone.

Of all the classifications of persons with reading limitations, persons whose reading limitations stem from learning problems are the most active, doing on the average over five of the eight activities (these individuals are mostly under age 17). Persons with both visual and physical reading limitations are both the least active of the respondents and the least pleased with the activities (they liked fewer than three things "a lot") and, on average, did only 3.5 activities. Persons with only seeing limitations, on average, did 4.7 activities and said most frequently that they enjoyed doing things "a lot" --3.7 activities. Persons having only physical limitations participated in 3.7 activities, on average, and liked 3.2 activities "a lot" (see Table 5-2).

Reasons for Developing Hobbies

Personality and motivation are two of the prime determinants of an individual's leisure style (Havighurst and Feigenbaum, 1959).* Since reading is thought to be motivated by particular topical interests, in our study we sought first to explore the extent and range of interests of persons with reading limitations, and then to describe the characteristics of persons with avocations, in the hope of shedding some light on the characteristics of the potential reading population in the process.

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*The phrase "leisure style" refers here to an individual's tendency to develop one strong interest, several interests, or perhaps none at all.

Some respondents seem to have patterned their leisure activities after their current social roles as students, homemakers, workers, parents, grandparents or what-have-you. While others seem to have developed hobbies as a means of compensating for their relatively ungratifying primary and secondary responsibilities or social roles. It appears that many of the respondents invest a considerable amount of time and energy acquiring a proficiency in skills required by their hobbies. For most of the respondents, hobbies and special interests are a source of pride and prestige. Many of the respondents reported hobbies centered about the home or family: carpentry, gardening, sewing, going to church, taking care of pets, visiting with neighbors and friends were common. For a smaller number of respondents, hobbies provided an opportunity for service, such as doing volunteer work for community programs, or for productive commercial activity, such as making and selling maple syrup.

For many households in which the disabled person was either a young child, a parent or a grandparent, the respondents (or where the disabled person was a young child, the proxy respondents) described a home and leisure life built around the children. For a smaller group of respondents, leisure time was centered around more community-oriented activities. Here, participation in clubs and organizations, in church and in purposeful activities were rewarding out-of-home activities, which provided an opportunity for socializing and making interpersonal contacts. (Religion seemed to mean more to the older respondents than the younger.)

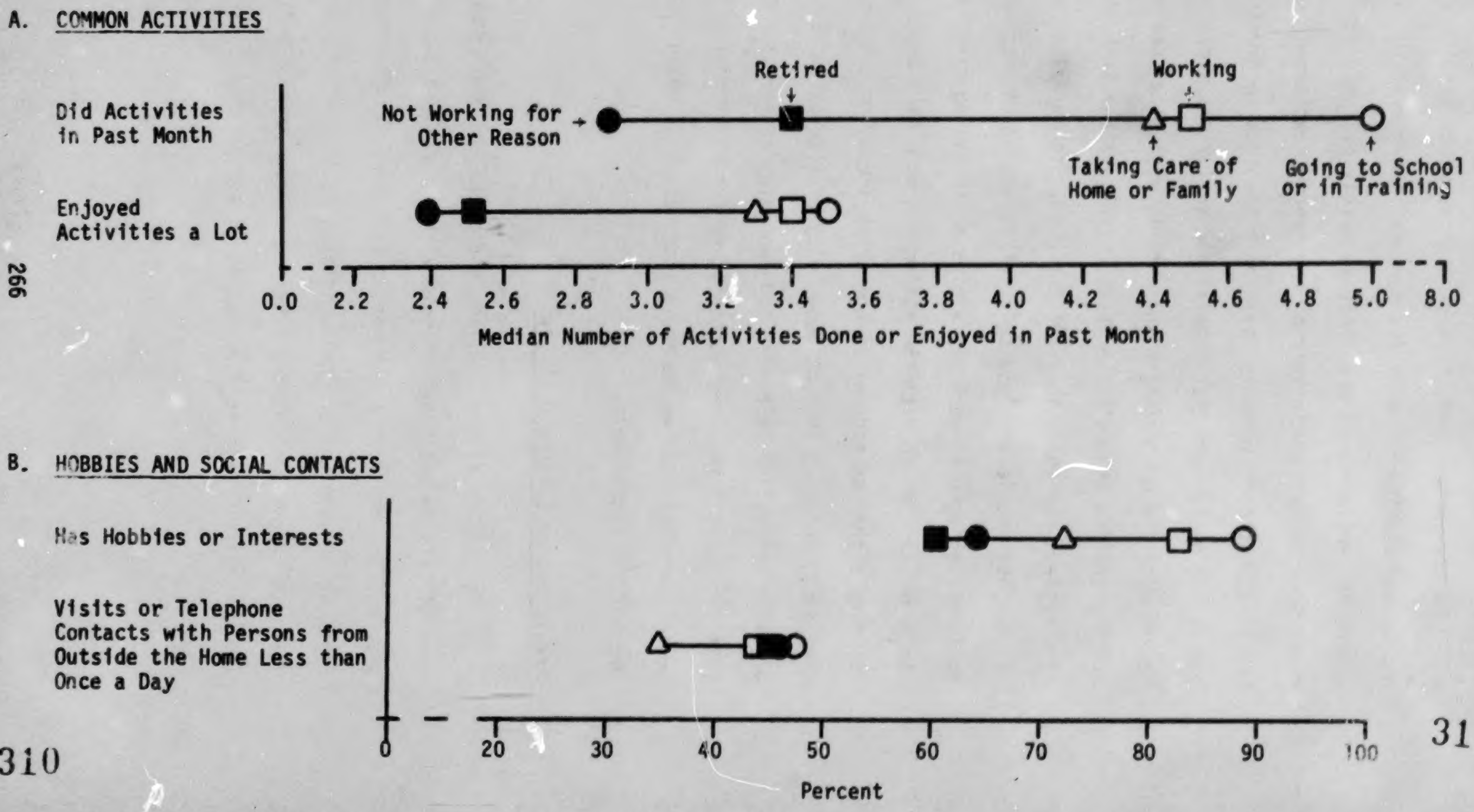
On the whole, then, leisure time pursuits provide a social identity and an opportunity for creative personal engagement for some of the respondents, while for others, hobbies merely fill the time and reduce their boredom, without eliciting any genuine excitement or enthusiasm. For some of the respondents, primarily the less independent of the sample, it would seem that hobbies and activities might provide the opportunity for embarrassing encounters, accidents, new needs for help, and frustration at one's own inadequacies, rather than the restoration of energies, for which they are designed. It may also be that for some of the less mobile and less self-sufficient of the respondents, who are no longer engaged in work activities or in taking care of a home, and who have been imbued with the notion the work is a moral good and that retiring either on account of age or physical limitations is a defect of some sort, engaging in continuous play or recreation (or non-purposeful activity generally) is boring and demeaning rather than rewarding. These last two conjectures were suggested by the widespread withdrawal from social participation we observed among the less mobile and less independent of the respondents.

Predictors of Leisure Activity

As seen in Figure 5-4, age and social role are important predictors of leisure activity. People with the busiest social lives outside of the home report the most active pursuit of avocations: 83%-89% of those persons who are going to school, in training, working or looking for jobs report also having hobbies, whereas only 62%-71% of these persons who are either retired for reasons of age or choice, are busy house-

Figure 5-4

Activity by Usual Social Role



keeping, or are not working for reasons of health report having hobbies. Curiously, those people with the most free time seem to practice hobbies the least. As noted above, this may be because too much leisure time or recreational activity is as intolerable as too much work. To be enjoyable, leisure activities must be a departure from the norm not the norm itself.

The proportion of persons who have hobbies begins to decline sharply with age during the later working years when adventitious limitations are beginning to set in for most respondents: 87% between 6-16 years practice hobbies; 84% of those 17-44 have hobbies, 69% of those 45-64 years have hobbies; and 59% of those 65 years and over have hobbies.

There is no difference in participation for men and women overall, or within age groups. People living in different regions and different population densities appear to behave about the same: warmer, more comfortable weather does not seem to induce a greater interest in hobbies. The participation rates are not affected by living situation either: living alone does not seem to restrict people from having hobbies, though it does seem to bear on the types of activities pursued and the motivations for pursuing them. (This is discussed further in the section on Socialization/Isolation.) Non-whites, however, are slightly less active than whites (63% report hobbies), and education and family income are both strong predictors:

(a) 62% of persons with incomes of less than $5,000 participate in hobbies, compared to 80% for persons with incomes over $20,000;

(b) 83% of the persons with a grade school education (1-8 years) have hobbies, whereas 70% of the high school graduates have hobbies, as do 83% of college graduates.

The severity of the reading limitation, mobility and general health are about equally strong predictors of special interests and hobbies as are age, education, and income.

Kinds of Hobbies/Interests

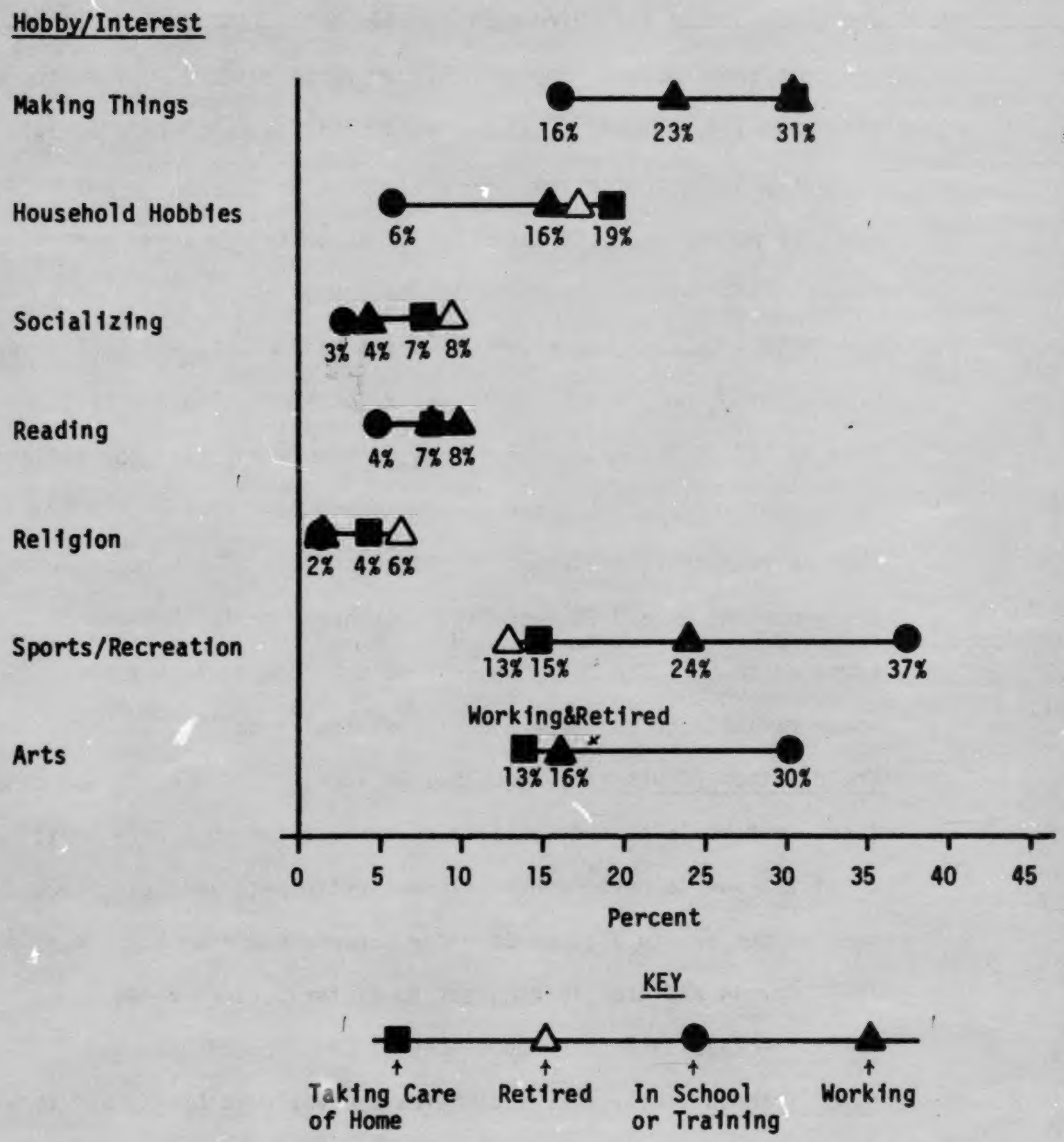
The observed variations in, and combinations of, hobbies and interests pursued by the respondents were quite great. The large number of people who engage in both active and passive leisure time activities indicates that rather than considering active and passive pastimes to be at opposite ends of the spectrum, they need to be viewed as two distinct dimensions of leisure. For some people, active hobbies may dominate, for others passive pursuits may be more primary. But whatever kinds and combinations of hobbies one practices, they reflect both the determining factors and the life stage, the social roles, and the strivings of the respondents. The pattern of social role variation for the population with reading limitations is seen in Figure 5-5.

Making Things - Handiwork such as sewing, needlework, embroidery, quilting, knitting, weaving, crafts, carpentry, mechanics and electronics, etc., are the most popular types of hobbies. Working with one's hands is more popular among women (34% do it) than men (15% do it), and among older persons (31% over 64 years do it) than younger persons (13% do it).

Recreation - Indoor and outdoor recreation, ranging from playing and watching sports, to camping and walking, to playing board games, is the

Figure 5-5

Hobbies and Interests by Social Role



second most popular hobby (21% do this). This is the favorite hobby of men (36% do this). An interest in sports declines with age (44% under age 17 participate, while only 12% over age 64 do).

Arts/Entertainment - Keeping up with the arts, the entertainment industry and the media is the third most popular hobby (19% do this). Dance, music, art/architecture, photography, writing, theatre, movies and television were all commonly mentioned as activities which people either follow regularly or do themselves. More vigorous participation was observed among young persons (27% under age 17 do or follow them) than among older persons (16% over age 64 do or follow them).

Household - Cooking, doing home repairs, gardening, and taking care of pets were commonly mentioned household hobbies. These activities are done by 14% of the respondents. As is consistent with the national pattern (Robinson, 1977), older persons spend more time at these activities than do younger individuals. Eighteen percent of the respondents in the age groups 44-64 and 65 years and over have special hobbies in the home compared to 5-7% for the younger groups 6-16 and 17-44 years. Men and women participate in these activities about equally.

Organizations/Clubs - Doing volunteer work, joining clubs and organizations, entertaining and socializing are hobbies that were mentioned by 6% of the sample respondents. Women participate in these about twice as much as men (7% to 3%), as do older persons compared to younger persons (6-8% for 44 and over in contrast to 2% for persons 6-44).

Reading - Reading is a hobby for 6% of the respondents.

Miscellaneous - Religious activities are followed by 4%, and cars, motorcycles and airplanes (riding, repairing and constructing) are hobbies of 4% of the respondents.

Correlates of Hobbies - The social, demographic and health correlates of specific hobbies are given in Table 5-3. The most consistent predictors are age and sex, social role and income, and mobility. The type and severity of the reading limitation are weak and inconsistent guides to general hobbies that people do and enjoy. Unfortunately, the survey questions did not distinguish between vigorous, physical participation in activities and a more passive interest, as in spectator sports. Two distinct groups of hobbies/interests are related to the intensity of activity outside the home. The people who are the busiest outside the home are also the most enthusiastic about sports/recreation and arts/entertainment. And, similarly, those who are the least active outside the home most enjoy hobbies that may be pursued inside the home--making things, household pursuits, socializing, reading. This is seen in Figure 5-6.

Persons who live alone are slightly more prone to some hobbies than others, as are persons who live in cities. Overall, though, the patterns observed for participation in common activities hold. The most able-bodied persons are the most active, as might be expected. However, generalizations are not possible for particular interests.

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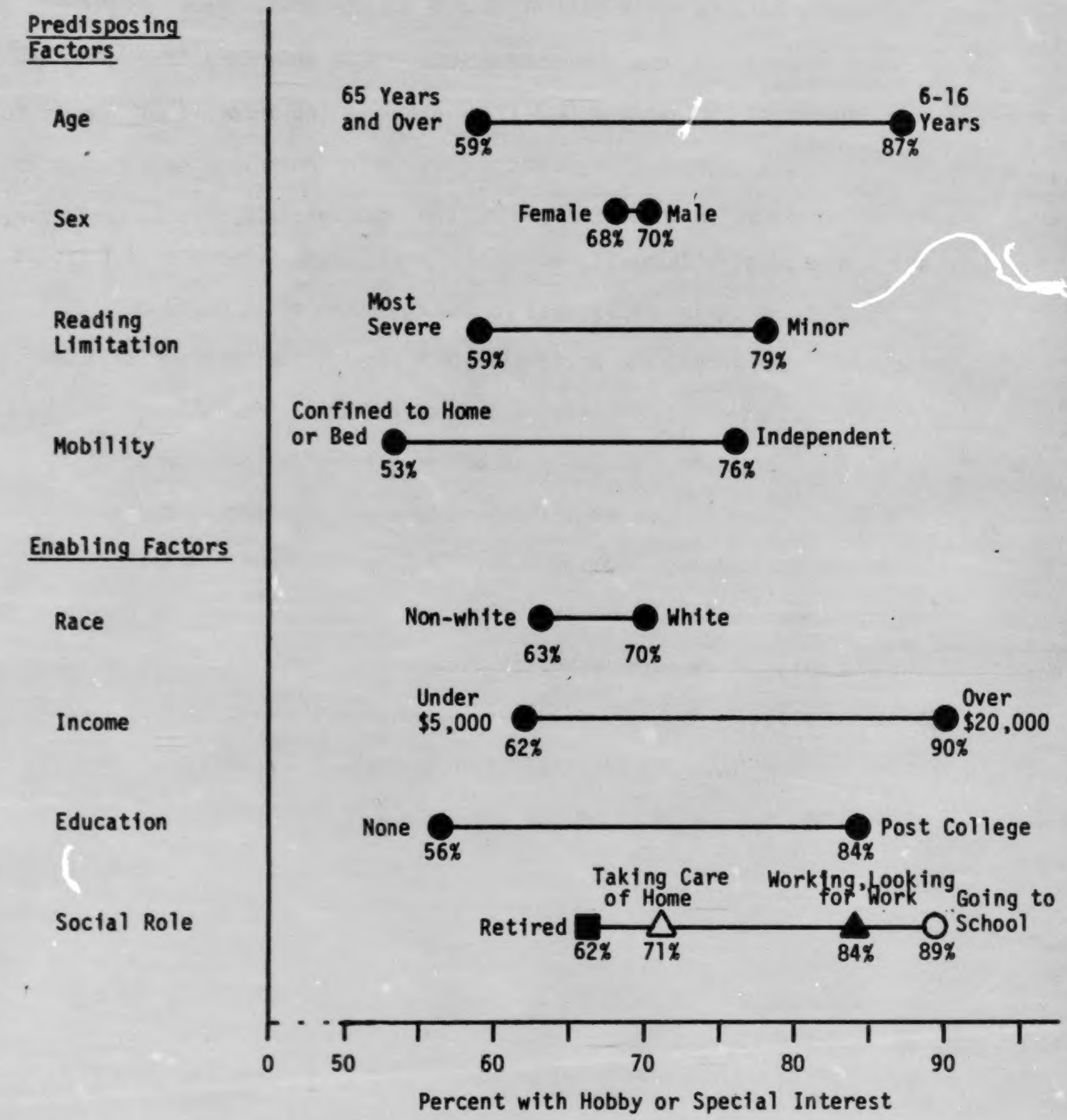
Figure 5-6

Participation in Special Interests and Hobbies by Selected Predisposing and Enabling Factors



SOCIALIZATION/ISOLATION

If it is the case that more isolated persons seek vicarious or para-social contacts with media personalities or characters in novels and plays to a greater extent than less isolated persons, then the level of social participation is one guide to potential media usage. The high interest in American in reading biographies and autobiographies and in keeping up with the daily lives of characters in the news and celebrities may also reflect this craving for vicarious experiences. These relationships may become either complements to, or substitutes for more intimate interpersonal contacts (Horton and Wohl, 1963).

One very straightforward measure of isolation is whether or not an individual lives with other people. To recall, our sample is fairly reflective of the household composition of the American population. One out of five of our respondents lives alone, nearly three out of four of those persons living alone is 65 years or older, and over four out of five of the persons living alone are females.

Rather stark isolation is a very real phenomenon for at least 7% of the respondents. It was presumed that for persons with reading limitations who live alone--many of whom also have mobility restrictions or are in poor health--telephone calls from, or visits with friends, neighbors, family, shopkeepers, and social workers would be common. Yet a third of the respondents who live alone have contact with other people, on average, less than once a day; and a quarter only talk to or visit with other persons about once a day (see Table 5-4). Persons with reading limitations

Table 5-4

Frequency of Talking on the Telephone or Visiting With Persons From Outside the Home

Characteristic	Weighted Sample Size	Total	Less Than Once a Week	Once a Week	Several Times a Week	Once a Day	Several Times a Day
Age		-------------------	-------------------	-------------------	Percent	--------------	--------------
6-16 Years	(737)	100	14	12	23	25	26
17-44 Years	(1091)	100	14	7	27	27	25
45-64 Years	(1840)	100	13	4	22	29	32
65 Years & Over	(3273)	100	16	6	26	25	27
All	(6941)	100	15	6	25	26	28
Sex							
Male	(2702)	100	25	8	27	21	19
Female	(4168)	100	5	5	24	31	34
Living Situation							
Alone	(1451)	100	2	4	27	25	42
With Others	(5333)	100	18	7	24	27	23

who live with others appear to have less social contact with other individuals outside the home than do persons who live alone: nearly half talk on the telephone or visit with others inside or outside their homes less than once a day.

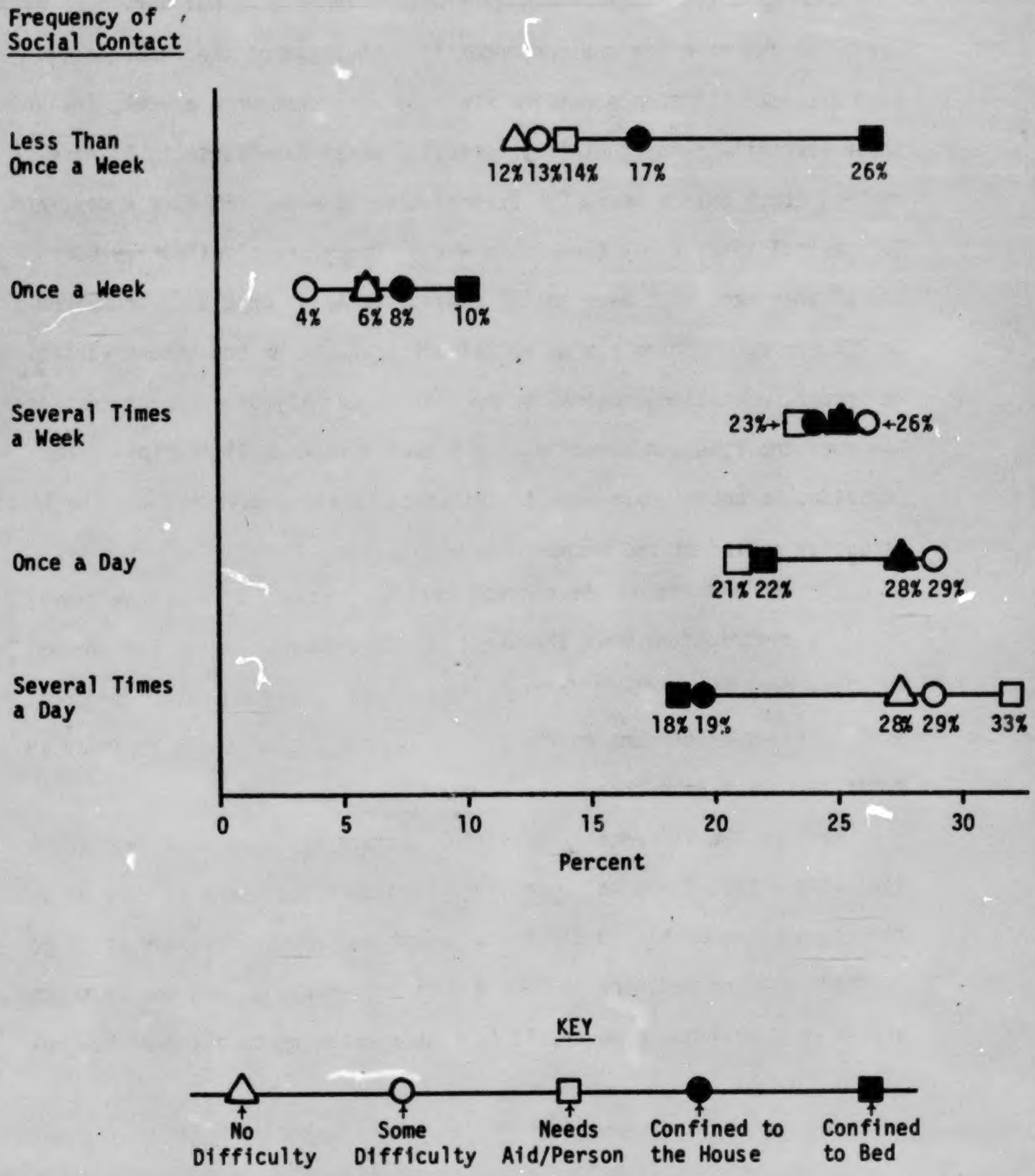
Talking on the phone or visiting with friends does not vary much by age or social role for the respondents: about 14% of the respondents have contact with people outside the home less than once a week, including three percent who say that they virtually never have contact; 6% have contact about once a week, 25% several times a week, 26% once a day, and 28% several times a day (see Table 5-4). Women are signifcantly more social than men: 62% have social contact at least once a day compared to 40% for men. There are no racial differences, or consistent variations by income, education, region, or population density of place of residence. Nor does the type and severity of a person's reading limitation or the individual's social role seem to influence in any consistent way the level of socialization of the respondents.

Persons who are in the poorest health, however, or who have severe mobility restrictions have the least social contact. Seventeen percent of those persons confined to their homes have less than daily contact with visitors or persons on the telephone, and 26% of those confined to their beds have less than daily contact (see Figure 5-7).

Perhaps the infrequency of social contact for persons with reading limitations should not be surprising given that about one in four of the respondents are unable to utilize a telephone, one in four are confined to their home or bed, one in four are hard of hearing, and one in seven are in poor health. However, it is rather alarming to discover how re-

Figure 5-7

Frequency of Talking on the Telephone or Visiting With Persons From Outside the Home by Mobility Status



latively isolated many of these persons are.

The adequacy of reading services becomes all the more crucial in the face of such isolation, since reading potentially serves the vital need of keeping these persons in contact with an outside world, from which they might otherwise be altogether cut off.

USE OF MASS MEDIA

Television

Nearly every one in the general population seems to watch television: 46% of U.S. adults said it was their favorite way to spend an evening. The average amount of time spent by adults in front of a TV in 1978 approached two and a quarter hours a day. The popularity of TV among the aged is documented: TV is felt to be especially well-suited to isolated, older and homebound persons because it provides the semblance of participation and face-to-face contact.* Exposure to television among the aged varies from study to study, but average viewing typically ranges from between three to four hours per day (Atkin, 1976; Davis, 1976; Comstock, _et al_., 1978; Real _et al_., 1979).

Persons with reading limitations similarly watch or listen to television quite a bit. Although about 9% do not watch at all, and 12% watch for one hour or less a day, 16% watch for more than six hours a day. Half of the respondents watch TV at least 2.7 hours a day,** and one quarter watch TV more than 3.5 hours a day. Remarkably, the pattern of TV viewing is not altered very much when social, demographic and health factors are considered. Figure 5-8 shows that most respondents watch between 2.6 and 2.8 hours of television a day. Persons with only physical problems watch TV the most (3 hours per day), followed closely by persons not working for reasons of health or disability (2.9 hours a day). Persons who are working or going to school watch TV the least (2.5 hours per day). Persons who are hard of hearing watch slightly less TV than those with no hearing problems. Similarly, persons who are unable to see print watch slightly less TV than average, but only by approximately 10%. Data on the patterns of TV and radio use among persons with reading limitations are given in Table 5-5, and demographic patterns are given in Table 5-6. We did not specifically probe the respondents for the preferred content or the functions that TV serves, but, as shown in other studies (Davis, et al., 1976; Wenner, 1976; Atkin, 1976), news programming seems to be preferred. Information/reality news programming is followed by entertainment (action - adventure shows, situation comedies, movies, soap operas and variety shows), game and talk shows. Television's capacity, noted above, to fill the gaps left by a lack of companionship and to help pass the time are important functions to the older viewer.

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*The image of older and of disabled persons portrayed on television is not a realistic one. Relatively few elderly persons of either sex are seen on prime time TV. When they do appear, they are rarely seen as having health problems or as doing interesting things. Typically, they are victims or villains, or rather comical characters (Aronoff, 1974; Greenberg, 1979).

**We prefer to give statistics in terms of the median, or number of hours of TV watched by half of the respondents, rather than the mean, or arithmetic average of all persons. Unlike the general working age population, where about five percent do not watch any TV, non-viewing is about twice as high for the population with reading limitations. The mean is more biased by extreme values--that is persons who watch no TV or leave the TV on most of the day as background to other activities. The median is less affected by extremes. The mean viewing time of the respondents is 3.4 hours or approximately 1.25 times the median. The standard deviation is 2.7 hours.

Radio

There is more selectivity and variability in listening to the radio than in watching TV. The typical respondent spends three times as many hours watching TV as listening to the radio (2.7 hours compared to 0.9 hours).* Twenty-seven percent of the respondents do not listen to the

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*These are the medians. That is, half the respondents listened to the radio for more than 0.9 hours and half listened for less. The mean number of hours the radio was listened to is 2.5 hours, which is significantly higher than the median, illustrating the use of radio for background to other activities by a great number of persons. The standard deviation is 3.0 hours.

Figure 5-8

Use of Mass Media by Selected Social, Demographic and Health/Disability Factors

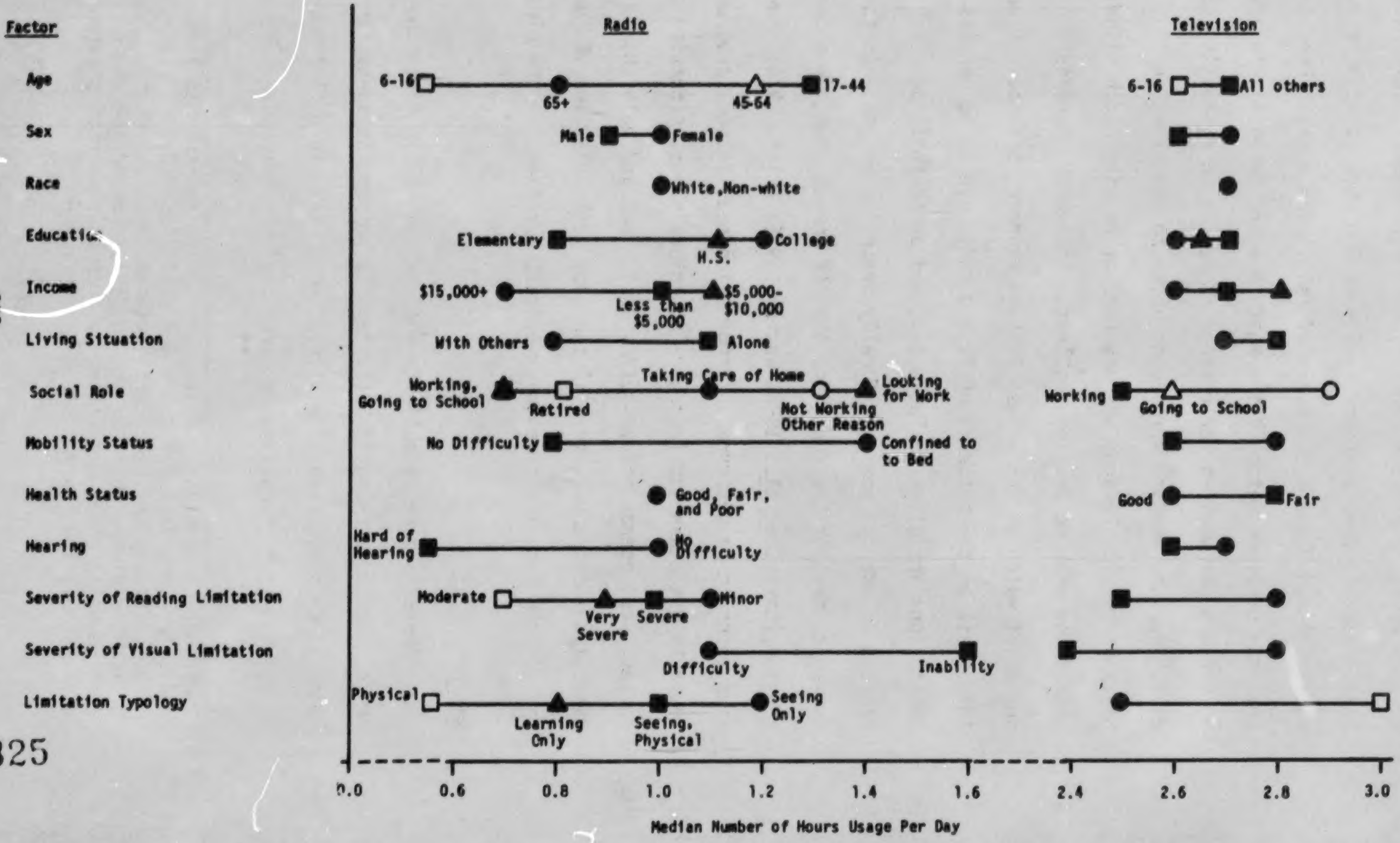


Table 5-5

Use of Television and Radio By Reading and Compounding Limitations

Reading Limitation	Weighted Sample Size	TELEVISION						RADIO					
		None	One Hour or Less	2-3 Hours	4-5 Hours	6 or More Hours	Median	None	One Hour or Less	2-3 Hours	4-5 Hours	6 or More Hours	Median
Specific Limitation		Percent						Percent					
Single													
Seeing	(2339)	10	13	42	21	15	2.6	22	26	26	12	15	1.2
Learning	(456)	4	11	53	21	12	2.7	34	32	19	9	6	0.8
Physical	(327)	7	9	35	17	32	3.0	35	25	21	8	12	0.6
Multiple													
Seeing & Physical	(1874)	11	13	37	23	16	2.7	26	24	23	11	17	1.0
Seeing & Physical & Learning	(1163)	9	11	42	22	16	2.7	28	19	24	16	13	1.1
Seeing & Learning	(633)	5	12	48	22	13	2.7	29	30	22	13	7	0.7
Physical & Learning	(194)	10	11	42	20	18	2.7	28	32	21	8	10	0.7
Seeing													
Have Difficulty Seeing Regular Print	(5650)	9	12	42	22	15	2.7	26	25	24	12	13	1.0
Unable to See Regular Print	(278)	21	18	24	20	17	2.5	14	17	30	17	21	1.6
Severity of Reading Limitation													
Minor	(1385)	6	12	41	24	17	2.8	24	29	25	11	11	1.1
Moderate	(1951)	6	12	47	21	15	2.7	32	27	19	12	11	0.7
Severe	(1328)	14	14	42	17	13	2.5	23	24	25	11	17	1.0
Very Severe	(2323)	12	12	37	22	18	2.7	25	22	26	12	15	0.9
Compounding Limitations													
Mobility													
No Difficulty	(3413)	7	13	46	22	13	2.6	25	28	23	13	11	0.8
Some Difficulty	(611)	4	15	42	22	16	2.7	30	24	22	11	12	0.8
Needs Aid/Person	(1308)	9	13	38	24	16	2.7	24	27	24	11	14	1.0
Confined to House	(1204)	16	9	37	19	19	2.7	30	19	26	10	16	1.0
Confined to Bed	(365)	21	7	26	19	28	2.8	31	12	20	11	25	1.4
Health													
Poor	(970)	14	11	34	22	19	2.7	30	21	24	11	15	1.0
Fair	(2335)	8	10	39	25	19	2.8	28	23	24	11	14	1.0
Good	(3640)	9	14	45	19	13	2.6	25	27	23	12	13	1.0
Hearing													
No Difficulty	(5177)	9	12	42	22	16	2.7	23	25	25	12	15	1.0
Hard of Hearing or Deaf	(1810)	11	14	40	21	15	2.6	34	26	20	12	8	0.5

Table 5-6

Use of Television and Radio
By Selected Social and Demographic Characteristics

Characteristic	Weighted Sample Size	TELEVISION						RADIO					
		None	One Hour or Less	2-3 Hours	4-5 Hours	6 or More Hours	Median	None	One Hour or Less	2-3 Hours	4-5 Hours	6 or More Hours	Median
		Percent						Percent					
Age													
6-16 Years	(777)	5	12	57	20	6	2.6	34	34	18	10	4	0.5
17-44	(1099)	8	16	37	24	15	2.7	17	24	31	13	15	1.3
45-64	(1812)	9	11	43	21	16	2.7	24	21	23	12	21	1.2
65 and Over	(3299)	11	12	39	21	18	2.7	29	26	23	12	11	0.8
All Ages	(6987)	9	12	42	21	16	2.7	27	25	24	12	13	0.9
Sex													
Males	(2781)	10	16	39	21	15	2.6	24	29	24	11	13	0.9
Females	(4140)	9	9	43	22	16	2.7	28	23	23	12	14	1.0
Race													
White	(5664)	9	12	42	21	15	2.7	26	26	23	12	13	1.0
Non-White	(1138)	7	12	42	23	17	2.7	25	23	27	12	13	1.0
Education													
Elementary (0-8 Years)	(2711)	9	11	44	21	15	2.7	31	25	21	12	11	0.8
High School	(2367)	8	13	41	21	18	2.7	23	24	24	13	16	1.1
College	(1350)	8	13	42	24	13	2.6	20	26	27	13	14	1.2
Income													
Under $5,000	(2876)	10	13	40	21	16	2.7	28	23	23	12	14	1.0
$5,000 - $10,000	(1441)	9	10	40	22	19	2.8	23	25	26	11	15	1.1
$10,000 - $15,000	(722)	6	13	46	18	17	2.7	24	27	27	12	10	1.0
Over $15,000	(927)	6	15	47	23	9	2.6	27	33	20	8	13	0.7
Living Situation													
Alone	(1407)	9	10	41	22	18	2.8	25	22	25	14	15	1.1
With Others	(5416)	9	13	43	22	13	2.7	27	28	22	10	13	0.8
Social Role (Usual)													
Taking Care of the Home	(630)	5	10	43	28	15	2.8	23	23	27	12	16	1.1
Going to School	(1004)	7	14	52	20	7	2.6	27	33	24	11	5	0.7
Working	(868)	7	19	50	20	4	2.5	21	29	27	11	14	0.7
Looking for Work	(168)	11	11	44	13	21	2.6	20	29	24	15	12	1.4
Retired	(2822)	10	11	39	21	19	2.6	28	26	23	11	11	0.8
Not Working for Other Reason	(1269)	11	11	33	23	22	2.9	27	19	24	13	17	0.8
Region													
North East	(1275)	12	11	44	19	14	2.6	21	24	24	14	17	0.8
South	(2726)	9	12	42	22	15	2.7	27	28	24	11	10	0.8
North Central	(1987)	8	13	39	22	18	2.7	26	23	25	11	15	1.0
West	(999)	8	11	43	22	16	2.7	32	23	20	12	13	1.2
Urban													
Metropolitan	(4681)	9	12	42	21	16	2.7	26	24	23	12	15	1.8
Non-Metropolitan	(2306)	9	12	40	23	15	2.7	27	27	25	12	10	0.8

radio at all, 25% listen for less than an hour a day, 24% listen for between two and three hours, and 25% listen for more than four hours a day. Young persons (ages 6-16) listen the least--0.5 hours per day, on average, compared tc 2.6 hours of TV. As with TV, persons confined to their beds listen to the radio more than the average, as do women who live alone and persons with minor reading limitations. See Figure 5-9.

SOURCES OF INFORMATION

News

In probing for the sources of information used by the respondents, we asked them how they kept up with "what's going on across the country and in the world." The major source of news is television: 60% say they use this medium to keep abreast, which is about the same as the Roper Surveys of the general population. Radio (32%), newspapers, (22%), and other media, (4%--mainly magazines) are the other mass media sources that are widely used. Talking with other people follows mass media as a means of keeping up to date (29%).

For the respondents, the high use of TV as a means of obtaining information and news may reflect its dependability and low cost relative to buying newspapers and magazines. Schools are an important news source for school age persons (20% of the persons between 6 and 16 years get news through schools): they rarely read newspapers (4%), or listen to radio news (2%). See Table 5-7.

Libraries, including those in the National Library Service network, are used as a source of current information about the nation and world by less than one percent of the respondents. There is relatively little variation by age, sex, race.

Table 5-7

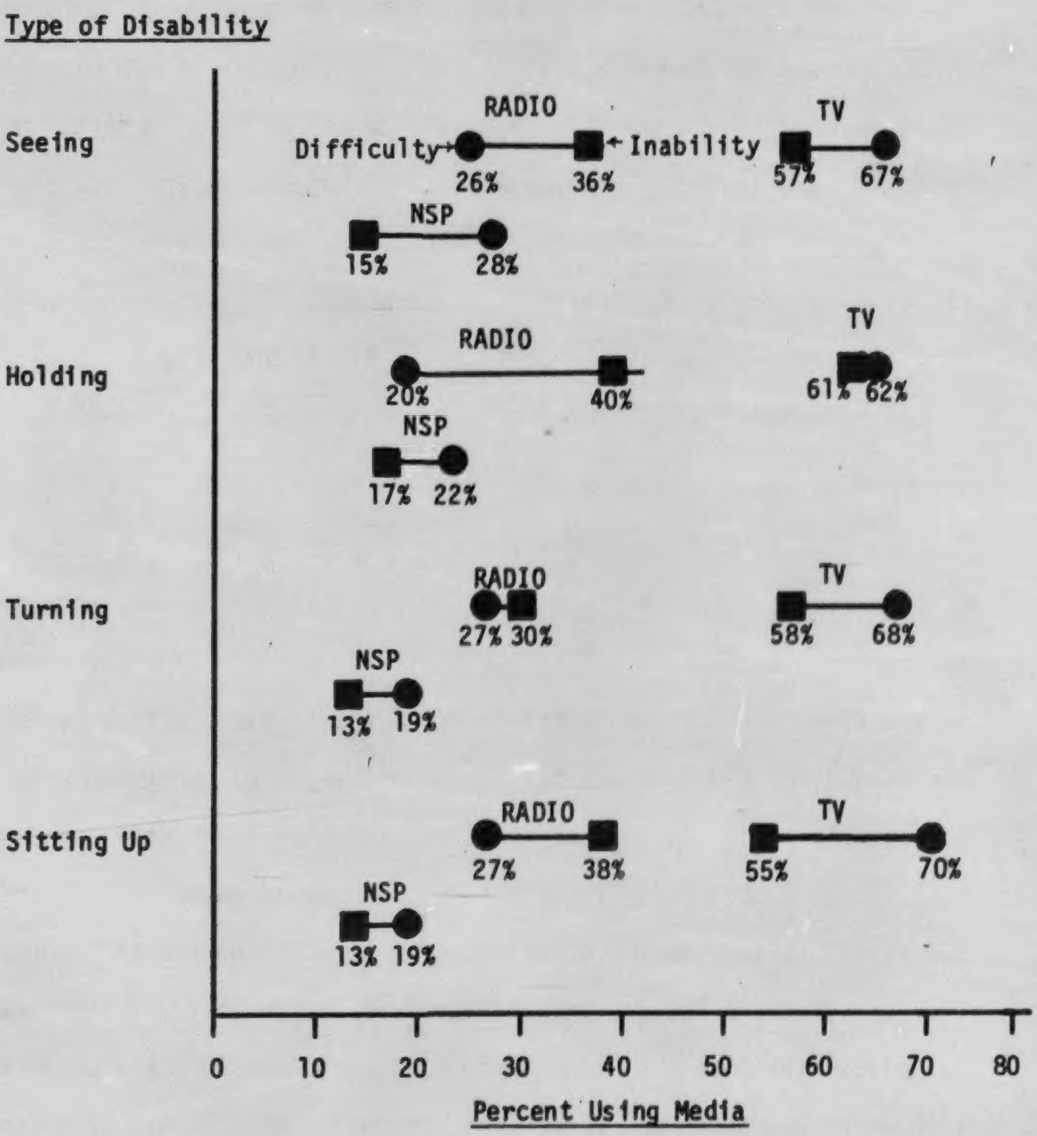
Sources of News and Information About Special Programs

Source	Information About What is Going On In The World	Information About Special Programs
	--Percent of Respondents Using Source--	
People		
Members of Household	7	11
Family/Relatives Out of Household	12	9
Friends	8	13
Handicapped Family Members & Handicapped Persons Other Than Above	1	1
Other	1	6
Media		
Television	60	39
Radio	32	22
Newspapers	22	30
Magazines	3	1
Books	1	*
Other Reading Matter	1	4
Other Media	2	4
Libraries	1	1
Social Security, Welfare, Other U.S. Govt. Agency	*	3
Organizations/Clubs	*	8
Work	*	1
School/Training	5	5
Church	1	2
Services		
Health Services	1	4
Other	*	4
Not Interested/ Not Applicable	*	7
Weighted Sample Size	(6933)	(6197)

* Less than 0.5%.

Figure 5-9

Sources of News By Type and Degree of Reading Problem



The more affluent and better educated of the respondents utilize radio and newspapers more often than TV and social contacts. But surprisingly, persons living alone pretty well match the national figures and utilize television only slightly more for getting information. Persons with severe reading problems tend to use newspapers slightly less frequently than those who cannot perform reading functions, as seen in Figure 5-9. Persons with a loss of perception (dyslexia, difficulty following instructions, etc.) are very close to the averages of all respondents, but individuals who are mentally retarded depend much less on mass media and much more on family and friends, and school resources.

Information About Special Needs

We also asked the respondents how they found out about such things as community programs for persons with physical impairments and reduced fares on public transportation for the handicapped. Of all the sources of information, the mass media and especially television (39%), radio (22%) and newspapers (30%), stand out as the primary ones for information about potentially important special concerns of theirs (see Table 5-7 and Figure 5-9). People, primarily friends (13%), household members (11%) and family and relatives outside the household (9%) were the next most important sources after the media. Information from a wide range of organizations and clubs ranked as a distant third (8%). Employers, schools, rehabilitation agencies, churches, health and community services are only very minor sources of information, amounting to 15% of the total responses.

Very significantly, less than one percent of the respondents mentioned libraries of any sort, including those sponsored by the National

Library Service, as sources of information about special concerns.

The sources of information used by persons of different social groups may serve as a guide for the National Library Service on how to reach its target population. About 20% of the school age population is kept informed about special services for persons with physical limitations by their schools and rehabilitation facilities. The totally blind depend a bit less on the media and more on organizations for information, the deaf use community resources slightly more frequently, and so on. In the main though, there are only minor (±5% points) variations from the aggregate pattern by age, sex, race, place of residence, education, income, type or severity of reading limitation, with the exception of severe learning limitations (see Tables 5-3, 5-8 and 5-9). We show in Chapter 7 that the most frequent ways that people became aware of the NLS program was through other people (first) and the media (second). Hence, of the ways to promote the NLS program available to program administrators, television, newspapers and radio spots are likely to be the most effective ways at present. The data also suggest the possibility of a new role for the NLS libraries in the area of information and referral activities.

In the general population, newspapers (62%) and television (55%) are the leading sources of information (Gallup, 1975). Libraries still play an important role as a source of information when books are used (43% obtained these from a library), but for other printed materials (i.e., magazines, encyclopedias, pamphlets/brochures, business and trade publications), the public does not generally utilize libraries.

For the respondents, however, utilization of the NLS or a public

Table 5-8

Sources of Information About Special Needs by Age

Sources	All Ages	6-16	17-44	45-64	65 Years and Over
	------------	------------ Percent	------------	------------	------------
Media	56	30	50	66	57
People	24	28	24	20	26
Organizations, Clubs, Churches	5	4	5	4	6
Schools, Training Facilities	3	20	5	*	*
Health Services	2	2	2	1	2
Other Services	5	5	9	5	4
Not Interested/Other	5	11	6	3	5
Total	100	100	100	100	100
Weighted Sample Size	(6197)	(613)	(963)	(1676)	(2945)

*Less than 0.5%.

Table 5-9

Sources of Information About Special Needs by Region

Source	United States	Region North East	South	North Central	West
	------------	Percent*	------------		
Media	56	54	57	57	52
People	24	25	22	22	22
Organizations, Clubs, Churches	5	6	6	5	7
Schools, Training Facilities	3	3	2	3	4
Health Services	2	3	1	1	3
Other Services	4	5	5	4	7
Not Interested/Other	5	5	6	5	4
Total	100	101	99	99	100
Weighted Sample Size	(6197)	(1131)	(2364)	(1856)	(845)

*Percentages may not add to 100% due to rounding.

library as an information resource is much lower. The fact that the respondents rarely utilize printed materials other than newspapers to answer questions or resolve problems is perhaps reflective of the low information-gathering ability of many of the respondents, and their relative dependency on others. (As we saw earlier, as many as 20% of the respondents are either physically unable to use a telephone or too young to do so.) It may be helpful to recall here that the respondents are older, less well-educated, less active and less affluent than the population at large, and as a result may also have less need for information or reduced motivation to express that need. The low utilization of libraries may also be due to a felt inability to search out materials in card catalogues and library stacks independently, combined with a lack of awareness of the availability of information services in many libraries. Finally, the unavailability of toll free telephone lines for inquiry may also contribute to this situation.

Hence, may NLS regional and subregional libraries may want to promote awareness of their information and free inquiry services. Data on sources of information by region and age are given in Tables 5-8 and 5-9.

HELP-SEEKING BEHAVIOR

Attitudes Toward Helping Services in America

The study also explored the extent to which organized social and personal services were used by the target population, and the sources utilized to obtain information about these services. Our expectation was that utilization of health, home and recreational services would serve as a gauge against which to measure the utilization rates of the National Library Service. We sought also to assess the social, demographic and health disability correlates of the use of these services, and to compare these with factors influencing reading and the use of print alternatives. We anticipated that persons seeking formal sources of help or specific types of health, home and recreational services would have different social and attitudinal profiles, as has been shown in prior studies by Kulka, Veroff and Douvan (1979), Andersen and Anderson (1979), Aday and Eichhorn (1972), Rosenblatt and Meyer (1972), and Kadushin (1969).

Over the period 1971-75, 18% of the U.S. adult population reported that they felt near a nervous breakdown and 5% said they had experienced one (Social Indicators 1976, 1977; p. 212). Curiously, the age group which expressed the least fear of serious mental health problems was the 65 to 74 year old group--just the age in which one would expect some major trauma to result from the major shift from a busy working life to a slower life of retirement.

In spite of the fact that many Americans may be in need of help, they have traditionally been wary of utilizing public helping services: many persons who could undoubtedly benefit from organized helping services are either unreachable or have chosen to set up lay referral networks and helping units.* In Chicago, the only community service for senior citizens which is widely used is the reduced fares on public transportation (Bild and Havighurst, 1976), and this is commonly the case in other cities like New York as well (Brickner, 1976).

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*Community social service programs for the elderly or homebound that have been tried include: reduced fares for senior citizens; friendly visitors; group meals - hot meals at low cost; meals on wheels; homemaker services - housecleaning, shopping, meal preparation; transportation services; budget planning for persons with low incomes; advocacy regarding entitlements; help in finding suitable housing; guides to vision, hearing and medical care; and social and recreational programs.

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A companion to seeking and utilizing help oneself is supporting social services. In 1975, 45% of the adults in the U.S. felt that we were spending too much money as a nation on social welfare: this represented a decline from 1973 when 54% said we were spending too much, but was still high enough to suggest that many Americans question the utility and the necessity of free social services.

The possibility that close family and friends wish to provide the full range of support services for persons in need of help in lieu of placing these persons in the hands of organized helping services runs counter to research findings on kinship in America.* Assistance to older family members may be based on sentiments of duty, guilt, affection or gratitude (Rosenfled, 1974; and Shorter, 1975). The increasing dependence of the elderly upon economic support from the government has further diminished their ability to, or perhaps their sense of justification in calling upon the family for attention and assistance (Treas, 1977).

Sussman (1976) argues that the increasing number and complexity of programs for the elderly (Medicare, Social Security, nutrition) has created new roles for family members as mediators between service providers and recipients. Despite the role of the family, friends and significant others as coaches, arbitrators and mediators in gaining entree and helping to penetrate the barriers to effective medical and social care (Hayes-Bautista, 1979), for the most part, Americans choose to do without public services. For example, in "Project Find," a study of the needs of older persons for community services in 13 major

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*For example, though families visit relatives in nursing homes they often do not do so happily. In York and Calsyn's study of family involvement in nursing home placement (1977) they found families expressed frustration, resentment and guilt about their visits and were willing and eager for the nursing home personnel to take over most patient needs.

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cities, nearly 60% of the 50,000 elderly persons surveyed expressed having needs that could be satisfied by these services, but not having made any contact with them (National Council on Aging, 1972).

Some of the reasons suggested by Kushler (1978) and Moen (1978) for the apparent unwillingness to ask for help from formal social services include: a lack of awareness of services; a general lack of confidence and fear; a desire to avoid unnecessary outside contact; a tendency to deny the problem and to avoid the need to establish credentials and eligibility to gate keepers of services; an apathy toward services; general misinformation; a wish to avoid welfare/charity; and a reluctance to respond to direct questions on income, health, and need.

Some incentives for change may, however, be upon us. With close to zero population growth, family support systems are now being more highly strained by the increasing numbers of older persons relative to children. One implication of this trend, according to Shanas and Hauser (1974), is that the increased demand for housing, health care, recreation, etc., will have to be met by society. This follows also from a trend, described earlier, for more women (potential helping daughters, daughter in-laws) to be working and unavailable to help older kin.

Factors Associated With Help-Seeking Behavior

Persons seeking help need to be ready for self-referral: they need to have identified a problem and they need to feel that they cannot handle it themselves or cannot handle it as well as they could if they had professional or lay help (Gurin, 1960).

As seen in Table 5-10, persons with print limitations do not appear

Table 5-10

Use of Helping Services in the Past Month by Persons with Reading Limitations - 1977

Type of Help	Percent*
Check-up or Treatment from a Doctor	47
Transportation	18
Housework	16
Organized Recreational Service	8
Counselling	6
Visits from a Home Teacher or Nurse	6
Vocational Training	4
Weighted Sample Size	(714)

*Percent adds up to more than 100%, as multiple types of help were used by some of the respondents.

to be very active in seeking help or in using community resources. This is consistent with most studies of the utilization of services by the elderly (Alexander and Podair, 1969; Hammerman, 1974; and Gaitz, 1974). Age, sex, family income and living situation are the strongest predictors of help-seeking behavior of the respondents during the past month among the social and demographic factors for particular services, but these factors are not a guide for use of all services. To illustrate, whether one lives alone or not is a good guide for the use of transportation and household help, but a poor guide for the use of visiting nurses. Education and race, curiously, are poor guides to help-seeking behavior. Relatively large differences in help-seeking behavior are seen, however, when help is associated with different levels of health, disability and mobility limitations, but, again, one must be cautious about making generalizations (see Table 5-11).

Family Versus Individual Perceptions of Help-Seeking Behavior

The families of persons with reading limitations appear to have slightly different perceptions of utilization than do the persons with the limitations themselves. The differences are not very great for most services, but where there are differences they appear to be along specific lines: families say more help was received for services that might be considered "social goods" which the family members are not trained to supply. Such services include visits from home teachers (or rehabilitation teachers*), vocational training, counselling and recreation. The respondents themselves, on the other hand, more readily admit to going to the doctor and receiving

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*Although the rehabilitation profession prefers the term "rehabilitation teacher," in our questionnaire we used the term "home teacher," and so for accuracy, use the latter term here as well.

Table 5-11

Use of Helping Services in the Past Month by Selected Characteristics

Selected Characteristics	Visits From Home Teacher or Nurse	Vocational Training	Counsel-ling	Medical Treatment or Check-up	Recrea-tion	House-Work	Transpor-tation
	percent using service						
Age							
6-16	5	9	19	37	25	4	9
17-44	5	11	15	42	11	9	21
45-64	5	1	4	49	2	16	16
65 years and and over	7	1	2	50	7	21	19
Sex							
Male	6	5	8	43	9	7	15
Female	6	2	5	50	8	22	19
Race							
White	6	4	6	46	9	16	18
Non-White	4	4	6	50	7	13	15
Region							
North East	8	4	8	48	10	16	18
South	6	3	5	44	7	15	15
North Central	5	3	6	47	10	17	19
West	5	5	8	54	8	16	19
Place of Residence							
Metropolitan Area	6	4	6	49	10	15	17
Non-Metropolitan Area	6	4	6	46	5	17	19
Income							
Less than $5000	7	2	5	50	8	22	21
$5000-$9999	4	2	4	44	6	10	13
$10,000 and over	4	7	10	45	12	11	15
Education							
Elementary	6	3	5	46	10	15	17
High School	6	4	6	46	6	18	18
College	5	4	8	49	9	15	19
Social Role							
Taking Care of Home	3	2	4	47	5	20	18
Going to School	5	14	22	39	26	5	15
Working	2	7	8	30	6	5	11
Looking for Work	4	15	25	53	9	5	18
Not Working for Another Reason	9	3	6	56	6	20	24
Retired	6	1	1	51	6	21	20
Living Situation							
Lives Alone	5	1	3	52	10	35	25
Lives with Others	6	4	8	45	7	10	16
Mobility							
No Difficulty	3	4	7	39	9	8	9
Some Difficulty	3	4	8	47	9	16	25
Uses Aid or Person	6	4	7	55	12	27	29
Confined to Home	10	2	3	56	5	25	26
Confined to Bed	21	2	8	59	2	18	14
General Health							
Good	3	5	9	38	11	11	14
Fair	7	2	4	55	7	20	21
Poor	9	2	4	61	3	25	24
Severity of Reading Problems							
Minor	3	3	4	42	9	11	11
Moderate	5	5	10	47	11	13	15
Severe	3	1	5	43	5	20	22
Very Severe	10	4	6	52	8	19	21

Weighted Sample Size = 7136 for most items help with housework and travelling--that is, with activities that are basis and essential. Whether actual differences exist or this is a matter of reporting or orientation cannot be assessed with our data.

Types of Help Obtained

Medical Care--Significantly, nearly half of the respondents reported that they had had a check-up with a doctor or medical treatment in the past month. One immediate implication is that physicians have a great potential to be excellent sources of referral to the National Library Service. Older persons, females, non-whites, the relatively educated, those who live alone, or those who have more severe mobility, health and reading limitations seem to go to the doctor more frequently than males, whites, less well-educated persons, etc. Curiously, affluent persons visit a doctor less often than poorer persons, perhaps reflecting that they are relatively healthy and are working: only 30% of those working and 39% of those going to school went to a doctor.

Travelling--Help in getting about is second in frequency of use after medical care among the services examined. One out of six persons have used help outside the home for transportation in the past month. Whites, females and persons who live alone or who have low incomes use help in getting from place to place more often than any other groups. Though there is no clear trend regarding age, older persons who are retired get a great deal of help, as do those not working for reasons of health.

In our sample people needed outside transportation primarily for going to the doctor, going shopping, going to church, to the bank or to visit. This compares reasonably well with the transportation needs of the elderly in Philadelphia found by Stirner (1978).

Help with Housework--Approximately one out of six persons used help from outside the home in performing housework chores. Women, persons living alone and those with the lowest incomes much more frequently made use of household help. As age increased so did the use of these services: persons not working for reasons of health, retired persons, and those taking care of the house are included among the heavy users of this service.

Recreation--About one person out of twelve participated in organized recreational services. One out of four children (6-16 years) were involved in recreation. Persons in all other social roles other than "student" made much less use (5%-6%) of organized recreation. Families with annual incomes above $10,000 used organized recreation services about twice as frequently as those with incomes lower than $5,000. Of all the services examined, recreational services appear to be more prevalent in metropolitan areas than in less densely populated areas.

Counselling--Mental health is both a personal and public health concern. Persons with special health/disability problems are usually thought to be subject to greater stresses than more able-bodied individuals who are absorbed in school and work activities. Yet, our findings show that the respondents, whether able-bodied or not, rarely receive help in dealing with their emotional problems. Overall, only one out of 16 persons received counselling in the past month, though the rate of persons with health and/or disability problems was nearly one out of five for school age children and those looking for work. Only one out of seven persons in the class of working age adults (ages 17-44) visited a counsellor or therapist, and less than one out

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of fifty elderly persons (65 years of age and older) received counselling. Twice as many persons living with others received counselling as did persons living alone, suggesting the beneficial effects of a supportive family. Significantly, persons who had the most severe health and disability problems were also the least likely to seek and receive counselling.

Visits from Home Teachers or Nurses--Home teachers provide training in personal management and the activities of daily living with the home and visiting nurses typically provide practical health care. Only about one in 16 persons obtains this kind of help, and they are generally persons in relatively poor health, or those who have the more severe reading and mobility limitations.

Vocational Training--Vocational training is most frequently obtained by persons going to school or looking for work. One out of ten persons in the age group 17-44 years received some type of job or occupational training in the past month. Career training and skill development is almost as common among school age children: one out of 12 school children received this service. As was expected, persons in good health with limited mobility restrictions more commonly participated. About one out of 20 persons who are currently working obtained vocational training.

Sources of Help

Once a problem has been defined as being susceptible to treatment by lay or professional help, and a decision has been made to go for help, the selection of a particular helping source must be made. The use of lay resources as compared to professional help depends on the type of help being sought, the information the individual has regarding his/her experience, alternative sources, his/her economic circumstance, etc. (Friedson, 1960).

Hence, analysis of the sources of help serves as a guide not only to household independence, but also to the awareness of disabled persons and their families to help outside the home. The findings in Figure 5-10 remind us of the fragmented nature of our service programs in the United States and suggest that special community services aimed at the elderly and the handicapped (if these exist) are not widely used by the respondents. Libraries are seldom used to satisfy adult educational and recreational needs or to provide information on where to go for help. Traditional resources in schools, rehabilitation agencies and health services are more commonly used.

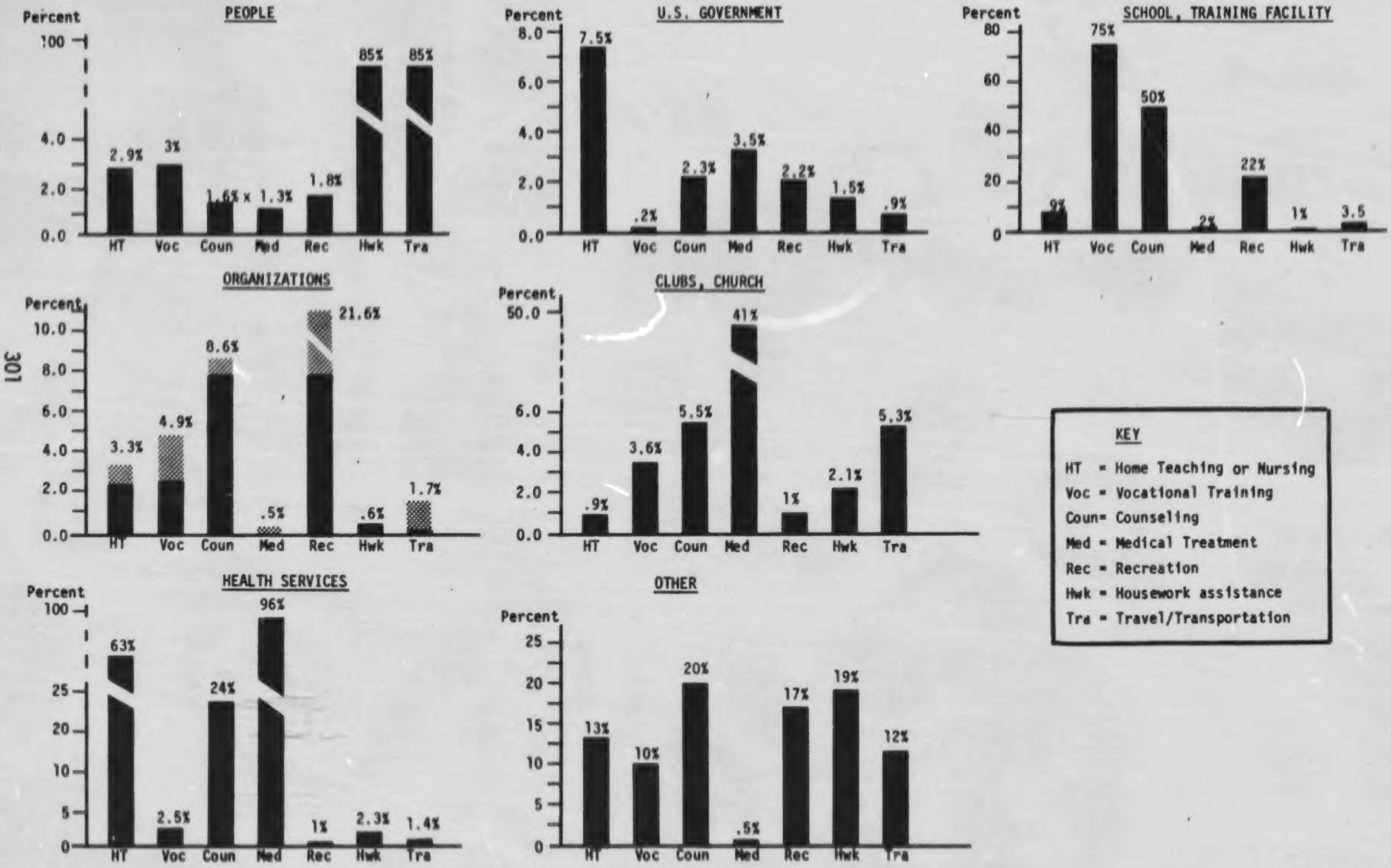
Respondents who need help in transportation or in housekeeping call on friends or family, or make private arrangements in more than eight out of ten cases. As might be expected, lay persons rarely provide medical treatment though they are heavily called upon to help in the home or in travelling.

Of the helping services examined, the various offices of the federal government are not used as direct providers very frequently, nor are they recognized as such by the respondents. Their prime direct contribution is in providing home teachers or nurses (8% use federal direct services).

Schools and training facilities are widely used by younger persons and those in rehabilitation training. Their main contribution in the area of direct helping services for the respondents in in providing home teachers or visiting nurses (9%), vocational training (75%), counselling (50%) and recreation (22%). Surprisingly, more respondents did not men-

Figure 5-10

Sources of Getting Help By Type of Help Received



tion schools as sources of transportation. Organizations including community services like the YMCA/YWHAs and advocacy groups of and for the handicapped are looked to as sources of help in counselling (9%) and recreation (22%). Clubs such as youth and senior citizen groups, social clubs, the boy scouts, etc. and church groups are the main sources of organized recreation (41%).

Health services (clinics, hospitals, privated physicians, nurses, etc.) are the primary suppliers of home teachers, medical treatment, and personal counselling. Transportation to and from these health services seems to devolve on the service recipients themselves, as it does for the general population.

A catch-all rubric of "other services" was used where the remaining sources mentioned did not fall into any of the above classifications. Overall, the contribution of these "other services," which include a variety of public and private, social- and family-oriented, and individual and community agencies, is considerable across many kinds of help. It ranges from 20% for counselling, 19% for housework, 17% for recreation, 13% for home teaching, 12% for travelling, to 10% for vocational training and 0.5% for medical care.

Sources of Medical Check-ups or Treatment--Private sources of health care were far more popular than public sources: private physicians were used by 73% of the respondents who obtained medical check-ups or treatment in the past month, while clinics, hospitals and other health services were only used by about 20%.

Sources of Organized Recreation Services--Local clubs and church groups were the key sources of organized recreational activities. Twenty percent of the respondents who had used recreational services in the past month visited senior citizen clubs. Five percent mentioned going to a YMCA/YWCA. Schools were also major recreational resources.

Sources of Help with Housework--Family relatives living outside the home (45%) helped most in housework chores, though friends (25%) were also major participants.

Sources of Help in Travelling--For assistance in getting about, the respondents depended on relatives (31%), family (25%) and friends (17%) most frequently. Formal travel services were only used by about 8%.

Sources of Home Teachers or Visiting Nurses--The main source of professionals providing help in home health care and activities of daily living were staff from local health services and hospitals (31%), nurses (28%) and personnel from community social services (18%).

Sources of Vocational Training--Surprisingly, of the persons participating in vocational training, very few (2%) received it on the job. Schools and special vocational rehabilitation facilities were sources for nearly 75% of the job training experiences.

Sources of Counselling--Schools were also the primary sources (46%) of help in handling personal problems, reflecting that counselling is used primarily by young persons and their parents. Physicians, nurses, psychologists and helping staff in health services (19%) were also a major source of counselling aid. Clergymen and other church persons (6%) and organizations of and for the handicapped (7%) also provided a source of counselling.

Implications

Three times as many persons called upon others for help in travelling as compared to professional counselling. Thus, it seems clear that some of the extrinsic factors that facilitate or hinder the use of professional help--e.g., adequate transportation (Cutler, 1972)--are more readily changed than the motivational orientations and basic problems of those who have them (Bennett, 1973). One implication of this for the NLS is that book mobiles and other reading resources, if brought to subscribers' homes, will be more successful in inducing persons with reading limitations to read than literature sent to their homes which exhorts them to approach librarians. If correct, this is consistent with the findings on both the use of media by persons with reading limitations, and on the ways to reach the elderly and the homebound. (This point is taken up further in Chapter 6.)

More generally, these findings suggest that the more personal modes of outreach are likely to yield better results for the National Library Service. Home visiting is likely to be the most effective way, followed by telephone contacts. For the reading restricted population, mail is likely to be a very poor third choice. It perhaps goes without saying that the information networks for helping resources are not functioning optimally. But this by no means implies that persons with reading limitations are unreachable. Media ads, church announcements, input to community information and referral services, word-of-mouth contacts from current subscribers and physicians are all viable means by which the number of current NLS subscribers might be increased several fold.

SUMMARY

In this chapter we presented data on the participation and satisfaction rates of the respondents with respect to: a) eight common activities of daily living, and b) their leisure life styles and hobbies. Our motivation here was to build a framework for examination in a later chapter of two complementary hypotheses which we thought would be instrumental in explaining the relation between the respondents' involvement in, and enjoyment of leisure time activities and their potential interest in reading. The first--that one's motivation to read is positively affected by one's participation in activities--implies that people with the busiest lives, or those in the most active social roles are likely to do more reading than persons in more passive roles, such as retired persons. The second hypothesis--that relative inactivity promotes a heavy reliance on indirect means of communication--suggests that the least active persons might be as interested in reading as the most active ones, if not more so.

The data show that there is a high association between actual participation in activities and reported satisfaction with activities. The activity and satisfaction levels are themselves a function of the type and severity of the respondents' limitations: the more severe an individual's limitations are, the less active he/she is; and conversely, the more able a person is to perform a given activity, the more likely he/she is to do so. This finding is hardly surprising when we consider that people, in general, tend to do things they like to do and to like doing the things they are able to do. We also found that many of the respondents lead busy leisure lives and actively pursue a wide variety of hobbies and special interests, many of which require a fair degree of expertise to be enjoyed fully. Persons with the most severe reading and compounding limitations, however, tend to pursue hobbies less frequently.

The respondents are big users of mass media, spending nearly four hours a day per person watching television or listening to the radio. Radio and television usage, like participation in activities in general, is a function of the type and severity of the respondents' limitations; persons who are unable to sit up or are confined to their beds listen to the radio more than persons who have less difficulty performing basic tasks. Though radio-listening is often done in conjunction with other activities (or serves as a background to other activities), we found more selectivity in listening to the radio than in television-watching. Ninety percent of the respondents watch TV, and half watch for more than two and a half hours a day.

Television was the primary source of information for the respondents (60%), followed by radio (32%), other people (29%) and then newspapers (22%). People turn first to mass media to obtain information, then to other people, and only then to libraries (less than one percent). Similarly, for information about special needs and concerns of theirs, the respondents use mass media, especially television, the most, people next, organizations and clubs third, and again libraries least, and then seemingly only as a last resort.

The respondents do not seek out and employ formal helping services to any great extent. This is consistent with the use of voluntary social services generally in America. Barring the medical services, which were used by almost half of the respondents in the past month

(47%), available social services were not widely used at all. After the medical services, we note a sharp drop, with only 18% of the respondents seeking help from outside of their homes in travelling, and 16% in household chores. An even greater reluctance to utilize services was found for less basic activities such as organized recreation (8%), counselling (6%), home teaching or nursing (6%) and vocational training (3%). We speculated that, apart from a lack of awareness of the availability of helping services, many respondents may simply feel that it is easier to make do by themselves, either from a psychological standpoint, a practical one or both. It may be easier, for instance, to stop performing certain activities than it would be to one admit that there is a problem, two to find out about and seek aid, three to go through the process of establishing one's eligibility, and finally, to see oneself as someone that is the recipient of social services.

In the same vein, the low utilization of libraries as sources of information may be due to the fact that the respondents do not feel comfortable with, or adept at seeking out materials in libraries, they may not realize that libraries are sources of information, or finally, they may feel about the libraries that supply print alternatives as they do about social services generally, that they are not for them--whether because they perceive receiving social services as being tantamount to accepting charity, or because they do not want to admit that they have limitations in the first place.

The findings on help-seeking behavior suggest, then, that the respondents are not likely to be big users of the National Library Service as things stand now. But that is not to say that there are not steps that might be taken to reverse this trend. One of them, obviously, would be to expand the information and referral services available through the NLS, and to step up the publicity of these services. Another measure, and perhaps the more crucial one, would be to dissuade people of the notion that seeking information from a library, particularly a library for persons with print limitations, is the equivalent of accepting social welfare, in the perjorative sense that organized social services seem to have for many of the respondents.

CHAPTER 6

READING HABITS OF PERSONS WITH PRINT LIMITATIONS

The next several sections present findings specific to the reading habits of persons with print limitations. However, before we begin our presentation of these findings, it might be well to review the motivation for the call-back study. The primary purpose of the interviews was the development of profiles of: a) the social and demographic characteristics of this population, and b) their reading skills, experiences, reading contexts and tastes.* Some additional issues that we also wished to address were:

1) What are the barriers to reading (physical, social, situational)?
2) How might reading materials be made more accessible and attractive to persons with print limitations?
3) What were the means by which people became aware of the National Library Service -- to what extent do current users "spread the word" about the service?

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*Though the interviewer-respondent interaction is important in obtaining quality data, it can also pose problems. There is a tendency in this kind of study for the interview schedule to be somewhat value-loaded on the side that reading with the National Library Service is good. This "social desirability bias" can make the interview awkward for the respondent who does not care much about reading, or who does not know about, or find the NLS useful, since most respondents try to make a good impression on the interviewer. We felt that this potentially serious source of bias would be minimized by placing the questions on reading interests and quantity early on in the interview schedule, before the National Library Service was discussed. Had we first asked the respondents how they felt about the NLS service, they might have felt obliged to say that they used the NLS, even if they were not readers. But if, on the other hand, people initially said that they were not interested in reading, they would not be likely to then say that they were interested in the NLS program.

4) How might persons with print limitations be motivated to use the National Library Service program?

5) What dimensions of the NLS program (i.e., timeliness, convenience, ease of using the equipment, adequacy of selections) need improvement from the users' perspectives?

These issues will be taken up in this chapter and the two that follow. In this chapter we cover a wide range of issues pertaining to the reading habits of all persons with print limitations--both NLS subscribers and non-subscribers. They are as follows:

A) The Extent of Reading and What is Read Among Persons with Print Limitations

B) Reading Interests

C) Ways of Reading

D) Declining Use of Braille

E) Amount of Time Spent Reading or Level of Reading Activity

F) Who Reads?

G) Where Does One Get Reading Materials?

H) Factors Influencing What People Read and How Much they Read

I) Satisfaction with Reading

As with our findings on the leisure activities of the respondents, we will present the data on the general population along with that on the special population with print limitations in order to provide a larger context for our findings. The importance of this is clear: if only one in three American adults is a book reader, it would be unreasonable to expect that persons with print limitations read books more frequently. We have presented the background data on the general population in the first part of the chapter, so that the specific findings on the reading habits of persons with print limitations may be interpreted in light of them.

WHAT IS READ IN THE GENERAL POPULATION

The available research on the reading habits of Americans pertains primarily to adults. Fifteen years ago, American adults spent, on average, about 30 minutes a week reading books, 45 minutes a week reading magazines and 200 minutes a week reading newspapers (Ennis, 1965). Studies done in the 1970's show that on the whole the number of American adults who keep abreast of the times through newspaper reading has remained stable since the 1950's,* but that the frequency with which they read the newspaper has declined, as has their use of books and magazines.

The effects of levelling in the growth of the population and the decline in the number of persons seeking higher education have not yet been felt by the publishing industry, but it is a matter of serious concern. Another matter of concern is the decrease in the reading skills of young persons, in spite of the increasing levels of educational attainment achieved by a society in which a college degree is a prerequisite for entry into many occupations.* Results of studies of adult illiteracy vary, but roughly 15-25% are thought to be unable to complete a simple job application form (Social Indicators 1976, p. 308). A similar decline in reading skills may also be occurring among persons with print limitations, who, as we noted previously, are considerably less well-educated, on average, than adults in the general population to begin with.

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*About the same number of daily newspapers (1800) were published in 1976 as in 1940. Paid circulation has increased in that period from 54 million to 61 million persons and the average number of pages has risen from 43 to 57 pages (American Newspaper Publishers Association, various dates).

Repeated surveys by the Gallup Organization between 1958 and 1978 indicate that only 25-33% of the adults in the United States are "regular" book readers--that is, persons who read one or more books a month. The most comprehensive recent survey of reading behavior, conducted by Yankelovich, Skelly and White (1978) and sponsored by the Book Industry Study Group, interviewed a representative sample of 1450 adults (persons over 16 years of age). The population was categorized into three groups on the basis of the frequency and kinds of materials read in the last six months: Non-readers (6%)--persons who have not read any newspapers, magazines or books; Non-book Readers (39%)--persons who have read newspapers or magazines but not books; and Book Readers (55%)--persons who have read books and other materials. "Light book readers" (30%)--persons who have read 1-9 books in the last six months, and

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*Fewer books are produced per capita in America than in most Western countries: England ranks first; Canada, Australia, Norway and Sweden are all more reading-oriented than the United States (Social Indicators, 1976).

"Moderate/Heavy book readers" (25%)--persons who have read ten or more books in the last six months were subgroups of the Book Reader group.

Newspapers

About 60% of the adults in this country now read a daily newspaper, and although the overall incidence of newspaper readership is remaining fairly stable, the incidence of daily readership appears to be declining (Newspaper Advertising Bureau, Inc., 1978; NORC, 1967-1978). The average reader today spends only 20-30 minutes per day with the newspapers in two or more sittings.*

Similarly, there has been a regular decline in the number of newspapers read per household since 1920: the number has dropped from 1.4 in 1919 to less than 1.0 in 1975. This decline has been due in part to the growth of television and its present use as the primary source of news, and, in part, to the significant decrease in the number of cities where more than one newspaper is published. Since newspaper competition has declined, many papers look alike to the public, and consequently, people may feel less need to read more than one.

The data below from the National Opinion Research Center show that daily readership has declined 16% since 1967.

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*Due to pass-along readership, the daily newspaper audience is estimated at about 100 million adults, even though current circulation is only approximately 61 million copies. (Slightly more men than women read newspapers, and of those who read them, over half read more than one newspaper daily.)

Age When Interviewed	Percent who read "every day"					
	1967	1972	1975	1977	1978	Loss 67-78
18-30	61%	49%	51%	42%	38%	23%
31-43	77	75	68	60	53	24
44-56	78	79	73	74	66	12
57-69	77	77	75	78	77	0
70+	75	71	76	69	73	2
All Ages	73	69	66	62	57	16

This shift away from daily readership appears to have begun with the youngest age groups, 18-30 years, and a few years later to have spread or been carried to the age groups 31-43 years old, and 44-56 years old. The decreases are 23% in the age groups 18-30 years and 31-43 years.

One possible explanation for the shift is that people today are oriented to a faster paced, more easily obtained and less detailed presentation of daily events than is provided by newspapers, and so are easily seduced by television news, which, in addition to being all of the above, combines information with entertainment. However, there has been no marked increase in viewing TV news in these age groups over the same period of time, suggesting another possible explanation: a "turning off on the news," even entertainment-oriented news, by Americans. High rates of personal mobility among the younger working age population, contributing to a lack of strong community roots may also account, in part, for the decrease in newspaper reading. The basis for this conjecture is that most people are selective readers: the tendency is to rely on newspapers solely for information of a local character, such as local events and entertainment, local commentary, business and sports, and to get the national and world news from TV. Only 10-20% of the readers read the entire paper (Curley, 1979).

As shown in Chapter 5, TV is the most popular source of news among persons with print limitations as well. To many persons, information on where to shop is the most interesting feature; a modern daily paper contains about 65% advertising and 35% news, editorial commentary and features (Hicks, 1977). Among persons with weak ties to their communities, such as persons living in suburban "bedroom" communities, the newspaper tends to be used to maintain vicarious local contacts, and to fill time (Stone, 1979). The focus of most weekly newspapers is on community topics, with an orientation toward personal and emotional coverage.

Three-quarters of the newspapers sold in America are home-delivered. This element of circulation has remained stable over the 1967-78 period, but single newsstand purchases in the suburbs and cities have fallen off. This fact about newspaper circulation seems to parallel a discovery we made about persons with print limitations. One pronounced problem for such persons is finding out about and obtaining print alternatives. For a variety of reasons, which shall be discussed in more depth in Chapter 8 of this volume, it appears that persons with reading limitations would be able to do a lot more reading were books, magazines and newspapers brought directly to their homes.* The fact that most of the newspapers sold are home-delivered seems to support this intuition: if persons who are perfectly able to go out and buy newspapers prefer to have them home-delivered, it seems clear that persons with print limitations, who often have concomitant mobility limitations, would also prefer their reading materials to be delivered to their homes, and further, might do more reading were it easier for them to get such materials.

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*The difficulties persons with print limitations experience in obtaining and returning alternatives to print will be taken up in Chapter 8.

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Magazines

Magazines, journals and other periodicals tend both to satisfy demands for in-depth coverage of specialized subjects more than newspapers because of their longer length, and to last longer, since they are printed on higher quality paper than newspapers, and are usually bound. Most magazines are sold through subscriptions which, like home newspaper delivery, is an important convenience for persons with print limitations.

Most people spend more time reading a given magazine (the average is 3.5 readers) than a single copy of a newspaper. The average reader spends about an hour with an issue of a magazine, broken up over three or four different occasions (Hicks, 1977). Less than one half (44%) of the American adults read magazines weekly (Gallup, 1975), which represents a decline since 1965-66 in the number of magazines reaching a quarter of the population each day (Robinson, 1975).*

Table 6-1 presents a list of the most popular magazines along with median ages of readers of these magazines; this may be a good guide for the NLS in selecting periodicals.

Books

Books are obviously designed for a higher degree of permanence than either magazines or newspapers. This feature of books--whether they are in print or braille--is an extremely important one for

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*Despite the general decline in magazine reading, the number of different general and farm magazines has increased from 219 to 327 (1940-75) and the number of single copies sold has increased from 66 to 86 million. See Sterling, C.H. and Haight, T. (1978).

Table 6-1

Magazines Read by More than 0.5% of U.S. Adults by Category - 1976/1977*

Magazines by Category	Audience-% of Adults Reading Each Issue	Median Age of Readers
1. TELEVISION		
TV Guide	29.4	34.0
2. DIGEST OF BOOKS & ARTICLES		
Reader's Digest	28.6	44.9
3. HOME & HOMEMAKING		
Better Homes & Gardens	16.6	40.6
Family Circle	14.0	39.7
Good Housekeeping	13.8	41.0
Woman's Day	12.5	40.7
Family Weekly	12.4	43.8
Ladies' Home Journal	11.1	40.6
House & Garden	5.6	40.8
House Beautiful	4.1	38.9
American Home	3.0	39.9
Parent's Magazine	2.9	29.7
American Baby	1.3	26.9
4. PHOTO JOURNALISM		
National Geographic	15.0	40.2
People	7.8	29.2
National Observer	1.1	42.9
5. FASHION & STYLE		
McCall's	13.9	40.6
Redbook	8.6	35.1
Cosmopolitan	6.4	28.3
Glamour	4.9	27.3
Esquire	3.1	29.7
Vogue	2.9	31.6
Mademoiselle	1.9	27.2
Viva	1.0	27.3
Girltalk	.9	36.2
6. NEWS		
Time	13.8	35.6
Newsweek	12.0	34.7
U.S. News & World Report	5.6	41.7
The N.Y. Times- Daily Edition	1.4	38.0
7. MEN'S (Sex)		
Playboy	10.7	28.5
Penthouse	6.6	27.3
Oui	2.8	27.4
8. SPORTS & LEISURE		
Sports Illustrated	8.5	30.9
Ziff Davis Network	7.7	28.1
Field & Stream	6.7	38.7
Outdoor Life	4.8	38.9
Sports Afield	3.5	37.8
Sport	3.0	28.1
Road & Track	2.3	25.9
Car & Driver	2.1	26.0
Golf Digest	1.4	37.1
Golf	1.2	35.1
9. COMMENTARY/ARTS		
National Enquirer	8.3	40.0
Psychology Today	3.0	27.9
The N.Y. Times Magazine	2.9	39.2
The New Yorker	2.1	33.1
Harper's/Atlantic/ Natural History	1.9	36.5
Scientific American	1.3	30.7
Ms.	1.3	27.6
New York Magazine	1.0	33.0
Saturday Review	.9	34.5
10. "HOW TO"		
Popular Mechanics	4.4	35.3
Mechanix Illustrated	3.8	37.1
Popular Science	3.4	35.7
11. BUSINESS		
Wall St. Journal	3.4	41.4
Business Week	2.6	38.1
Money	1.3	33.3
Forbes	1.2	43.6
Fortune	1.1	39.0
Barron's	.7	45.1

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* Source: W.R. Simmons & Associates Research, 1977

library circulation though, of course, it also means that books, and particularly braille books, are the most expensive of the communication media.

Conventional wisdom says that the level and complexity of language in books makes them more difficult to read than magazines and newspapers, but studies of the number of syllables per 100 words and of average sentence length have found that just the reverse is true.*

Current trade statistics of books published indicate that: a) unit sales of books in the 1970's have been stable--1.26 million copies in 1972, 1.24 million copies in 1977; b) receipts in 1977 were $4.6 billion, up 58% over 1971; and c) book publishers are making money although they are troubled by the first downturn in book industry sales since World War II with the 1979 recession.** The majority of books are produced for schools and colleges rather than for recreational reading. Only about eight percent of the 26,000 new and the 7,000 reprinted editions in 1978 were fiction. Unlike the books produced for the general population, the bulk of reading materials prepared for persons with print limitations, barring the school-related materials for print-limited students, are designed to satisfy recreational reading needs, not informational needs. These production rates undoubtedly correspond to the ratio of print-limited students to print-limited adults.

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*The readability of novels is greater than that of newspapers, and has remained relatively constant since 1904, though the complexity of the language has increased. Fowler (1978) found that the average number of syllables per 100 words was 168 for newspapers and 138 for novels, and the average sentence length in number of words was 22 for newspapers and 15 for novels.

**Publishers Weekly, various dates; Statistical Abstact of the U.S., 1978 (1978).

A. THE EXTENT OF READING AND WHAT IS READ AMONG PERSONS WITH PRINT LIMITATIONS

Extent of Reading

Several questions were asked at different points during the interview to assess the extent of reading done by the respondents who were age 6 years and over. Three-quarters of the respondents queried said that they had read or listened to recordings within the past month, and nearly four-fifths (79%) reported reading, listening to, or being read to in the last four months. Approximately one quarter to one fifth (20-25%) of the respondents, then, are non-readers. This is nearly four times the recently estimated rate for the general adult population (Yankelovich, 1978).

What is Read

We categorized the respondents into nine groups, on the basis of the materials they had read in the past four months:

1. Non-Readers--20%	Persons who have not read any newspapers, magazines or books or listened to recordings of these, or been read to by another person.
2. Non-Media Readers--5%	Persons who read but do not read newspapers, magazines, or books-e.g., persons who read only correspondence.
3. Newspaper Only Readers--9%	Persons who only read newspapers.
4. Magazine Only Readers--1%	Persons who only read magazines.
5. Newspaper and Magazine Only Readers--10%	Persons who read magazines and newspapers but not books.
6. Book Only Readers--6%	Persons who read books but not magazines or newspapers.
7. Book and Newspaper Readers--6%	Persons who read books and newspapers but not magazines.
8. Book and Magazine Readers--7%	Persons who read books and magazines but not newspapers.
9. Book, Magazine and Newspaper Readers--36%	Persons who read books, magazines and newspapers.

These nine categories were then collapsed into four and compared to data for the U.S. adult population as a whole from Yankelovich (1978), as seen below:

Reader Category		All Persons with Print Limitations Age 6 and Over	U.S. Adult Population Age 16 and Over*
1. Non-Readers		20%	6%
2. Non-Media Readers		5%	
3. Periodical Readers/ Non-Book Readers (Persons who do not read books)		20%	39%
- Newspaper only Readers	9%		
- Magazine only Readers	1%		
- Magazine and Newspaper only Readers	10%		
4. Book Readers (Persons who read books, or books and other materials)		55%	55%
- Book only Readers	6%		
- Book and Newspaper Readers	6%		
- Book and Magazine Readers	7%		
- Book, Magazine and Newspaper Readers	36%		
Total		100%	100%

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*Surprisingly, we find that although many more people do not read at all among persons with print limitations, the same percentage of persons read books among those with print limitations as among the U.S. adult population as a whole. This seems remarkable indeed given that the print-limited adults are, on average, older and less well-educated than adults in the general population. See following for more on this issue. (See Figure 6-4.)

According to our findings, the incidence of reading newspapers is greater than that of all other materials for persons with print limitations, just as it is for the general adult population. Among the print-limited, 61% read newspapers, 54% read magazines and 55% read books.

B. READING INTERESTS

In terms of subjects of reading interest, the respondents do not seem to limit themselves to just fiction or non-fiction. Rather, fiction appears to be most popular for pleasure, and non-fiction for information and general knowledge. It was rather surprising to us that according to the respondents' indications of subject areas of particular interest, non-fiction topics seemed to be widely preferred. The five most popular subject areas within each genre were:

Non-Fiction	Fiction
Religion-------------70%	Short Stories--------68%
Current Events-------64%	Humour---------------62%
Nature---------------61%	Mysteries/Thrillers--43%
Travel---------------55%	Best Sellers---------37%
Do It Yourself-------50%	Children's Books-----35%

And the five most popular topics in general include three non-fiction and two fiction categories.* These choices are fairly consistent with the interests expressed by the general population.**

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*This may be of particular interest to the NLS because the current balance of books seems to lie on the side of fiction.

**Reading tastes in the general population have not changed greatly in the last 20 years, as seen by comparing the Yankelovich (1978) and Gallup (1975) studies with a similar study conducted by Lees in 1957. Lees found that the most popular categories of fiction were current novels, historical novels, social and psychological studies and short stories. The most popular non-fiction categories were history, travel, biography and religion, and in the general population these are still the most popular items. (Most books, of course, are produced for schools and colleges.)

Reading preferences vary by region, age and sex of the respondents, as seen in the Table 6-2. Careful study of these patterns may be helpful for selection policies targeted at specific audiences. Interestingly, men and women did not differ very much in the order of popularity of the leading topics, except for sports. Persons in different regions also ranked the topics of interest in about the same order, though there seems to be less consensus in the southern and northcentral states than in the northeastern and western states.

The broad interest in non-fiction is perhaps most clear from Table 6-3, which gives volunteered responses of reading interests. Here non-fiction topics outranked fiction by five to one. It was in responding to these questions about reading preferences that the respondents expressed their strong interest in the arts, in biography/autobiography, in mechanics and technology, in gardening and in specialized journals.

Table 6-4 shows the subjects of interest in relation to specific types of reading and compounding limitations. This table is read by going first to the "Total" column and observing the overall preference for each subject area. Then, if one wants to see the relationship of a particular kind of reading limitation to subject preferences, one goes to one of the succeeding columns. If a blank is present, there is no consistent or marked variation, and the national percent holds. If a "W+" is present, this means that there is a weak positive relationship between more severe reading limitations and subject preferences. For example, persons who are unable to see on the whole prefer religious materials W+, or 5% more than persons who only have difficulty seeing. An "M-" means that there is a moderate and negative association. Overall, the table shows a pattern of variation that is relatively slight and

Table 6-2

Reading Preferences by Selected Characteristics*

		Age				Sex		Census Region			
	All	6-16	17-44	45-64	65 Years and Over	Male	Female	North East	South	North Central	West
		--------Percents of------------ persons in each age group				-Percents of- Males or Females		---------------Percents----------------- of persons in each region			
NON-FICTION											
Religion	70	55	55	73	77	58	78	54	82	70	60
Current Events	64	35	58	69	70	64	64	71	59	66	67
Nature	61	77	67	62	54	62	60	55	58	65	66
Travel	55	62	64	56	50	56	55	57	48	59	63
Do It Yourself	50	53	60	59	42	44	55	49	51	52	49
History	45	37	47	49	45	44	46	47	42	46	52
Sports	41	63	49	40	34	66	25	43	40	43	39
Psychology	35	16	47	45	29	26	41	37	35	34	33
Science	34	49	44	37	26	41	30	36	33	33	39
Business	23	9	29	30	20	27	20	20	24	23	24
FICTION											
Short stories	68	72	71	68	65	61	72	69	63	72	70
Humour	62	68	68	65	56	61	63	69	53	68	63
Mysteries	43	54	52	47	35	45	41	45	36	47	49
Best Sellers	37	17	50	42	34	29	43	45	31	37	43
Poetry	35	26	34	39	36	22	45	29	37	38	32
Westerns	35	45	37	36	31	46	27	29	33	38	40
Current Novels	32	12	44	37	31	26	37	38	28	33	38
Plays	29	27	34	29	28	20	36	34	28	29	28
Children's Books	29	75	34	25	18	23	34	28	31	29	28
Science Fiction	29	52	45	26	20	36	25	31	27	29	34
Classic Novels	28	16	40	28	26	21	32	37	23	25	35
Text Books	26	58	41	25	14	26	26	25	25	26	29

---

*Sample size is about 7100 for all categories.
Percents add to more than 100%.

Table 6-3

Interest in Any Other Reading Subjects--Volunteered Responses

	(Weighted Sample) Size	Percent of Respondents Volunteering Responses	
Non-Fiction			99%
The Arts	(373)	27%	
Biographies/Autobiographies	(143)	10%	
Gardening	(138)	10%	
Mechanics & Technology	(166)	12%	
Medicine	(87)	6%	
History/Politics/Law/Social Sciences	(108)	8%	
Specialized Journals	(107)	8%	
Other Non-fiction	(249)	18%	
Fiction			20%
Animals	(129)	9%	
Romance	(53)	4%	
Other	(93)	7%	

Table 6-4

Association Between Severity of Limitation in Reading Print and Reading Interests By Type of Limitation**

			Type of Limitation in Reading Print							
Reading Subject	Weighted Sample Size	Total	Seeing	Holding	Turning	Sitting Up	Weakness	Learning*	Hearing	Mobility
			Persons With More Severe Limitations Are:							
Current Events	(7100)	64%		M-	M-			M-		W-
Sports	(7097)	41%				W-				W-
Religion	(7106)	70%	W+	W-	W-	W-	W-		W+	W+
Psychology	(7068)	35%	W-		W-	W-		W-	W-	W-
Do It Yourself	(7096)	50%	M-	W-		M-	M-		W-	M-
Business	(7081)	23%	W-						W-	W-
Nature	(7100)	61%	M-		W-	M-	W-		W-	M-
Travel	(7105)	55%	W-	M-	W-	W-	W-			M-
Science	(7080)	34%	W-		W-	W-	M-		W-	M-
History	(7086)	45%	W-	M-	M-		W-	W-	W-	W-
Poetry	(7083)	35%		W-	W-	M-	M-			
Plays	(7070)	29%				W-			W-	
Humour	(7093)	62%	W-				W-		W-	M-
Short Stories	(7083)	68%	W-	W-	M-	W-			W-	W-
Science Fiction	(7075)	29%		W-					M-	M-
Mysteries	(7078)	43%				W-			W-	
Westerns	(7076)	35%						W+		
Children's Books	(7070)	29%	W-	W-		W-		M+	W-	M-
Text Books	(7039)	26%	W-	W-	W-			M+	M-	M-
Best Sellers	(7056)	37%						W-	W-	
Current Novels	(7062)	32%						W-		
Classic Novels	(7049)	28%						W-	W-	

---

*Multiple limitations versus single limitation

**How To Read the Table:

This table is read by going first to the total column and observing the overall preferences for each reading subject. Then, if one wants to see the effect of reading limitations on subject preferences, one goes to the next columns. If a blank is present, there is no consistent or marked variation, and the national percent holds. If a W+ is present, this means that there is a weak positive relationship between more severe reading limitations and subject preferences --for example, persons unable to see, on the whole prefer religion W+ or 5% more than persons who have difficulty seeing. An M- means a moderate and negative association.

Key: W, Weak variation ± 5 points.
M, Moderate variation ± 5 points.
The direction of the association is given by the sign. A blank means no consistent or marked variation.

consistent with our expectations: for example, persons with more severe mobility limitations tend to like "do it yourself" materials less than do persons with less severe mobility restrictions.

Attitudes Toward Strong Language, Violence and Explicit Sex

The respondents are basically quite conservative in terms of the content of books that they would like to see in libraries. About 60-70% felt that books containing strong language, extreme violence, explicit sex or extremist attitudes of any kind should not be available in libraries. Twenty to twenty-five percent said that they should be available with warnings, and 10-15% said that they should be freely available. See below:

	Weighted Sample Size	Should be Available in Libraries	Should be Available in Libraries only with Warnings	Should not Be Available in Libraries
		---------- percentage of respondents ---------		
Strong Language	(6474)	14	23	63
Extreme Violence	(6513)	11	20	69
Explicit Sex	(6479)	11	21	69
Extremist Attitudes	(6349)	13	21	67

Older persons and those with the most severe reading limitations are considerably more conservative than other persons. Women tend to be more conservative than men, as do persons in lower income households, persons with relatively less education, and individuals living in suburban and rural areas.

C. WAYS OF READING

There is a close connection between the materials read and the ways used to read. Sighted persons typically decide to read a newspaper, magazine or book and then obtain the items of interest. Occasionally, a newsstand or bookstore may be out of stock of a desired item and the reader must shop about. For persons with print limitations, choosing materials to read is more complicated since all materials are not always available in each reading medium. Consequently, tradeoffs must sometimes be made between reading in the preferred medium and reading the preferred materials.

When the reading preferences of persons with print limitations are considered in terms of the demand for any particular reading medium, it is clear that the majority prefer printed materials to any other medium. Two things are immediately striking about this general tendency among persons with print limitations to opt for regular print materials whenever possible: the first is that print alternatives are not yet as readily available as they might be, for if they were, the demand for printed materials might not be as great as it is among the print-limited, many of whom currently use a magnifier or a sighted reader to read print rather than doing without the desired reading items. The second point, which is more a conjecture than an established fact, is that Congress need not worry excessively about expanding the eligibility for the National Library Service program to all persons in need of print alternatives, such as the broad category of persons with learning disabilities, since it is clear from the responses of the respondents who are both eligible for the program and able to read print, even if with difficulty, that the demand for print materials far exceeds the demand for any other reading format. Hence, we feel that a broadening of eligibility would not result in a vast increase in the demand for NLS reading materials and equipment that would greatly exceed the program's fiscal capability. On the other hand, it would make available those materials to persons who might benefit from them.

Overall, as shown in Figure 6-1, 60% of the respondents read regular print themselves, albeit slowly or with difficulty in many cases on account of dexterity problems, and many use magnifiers or other aids; 25% read large print themselves; 26% listen to recorded books and magazines, 14% of whom use records, 3% of whom use cassettes, and 9% who use both records and cassettes; 5% read braille; and 48% have somebody else read to them.

About half of those who read use one format exclusively, and the other half use a variety of media to read. (These various reading combinations are seen in Tables 6-5 and 6-6.)

Only 29% of the respondents who read use regular print exclusively. This suggests that at least 71% of the respondents who read, and some of the non-readers as well, might make use of alternatives to regular print offered by the NLS regional and subregional libraries. Fifteen percent of the readers depend solely on other people to read to them, 5% use recorded materials exclusively, 3% read only large print, and 1% use braille exclusively.

Figure 6-1

Media Used for Reading
Among Persons with Print Limitations

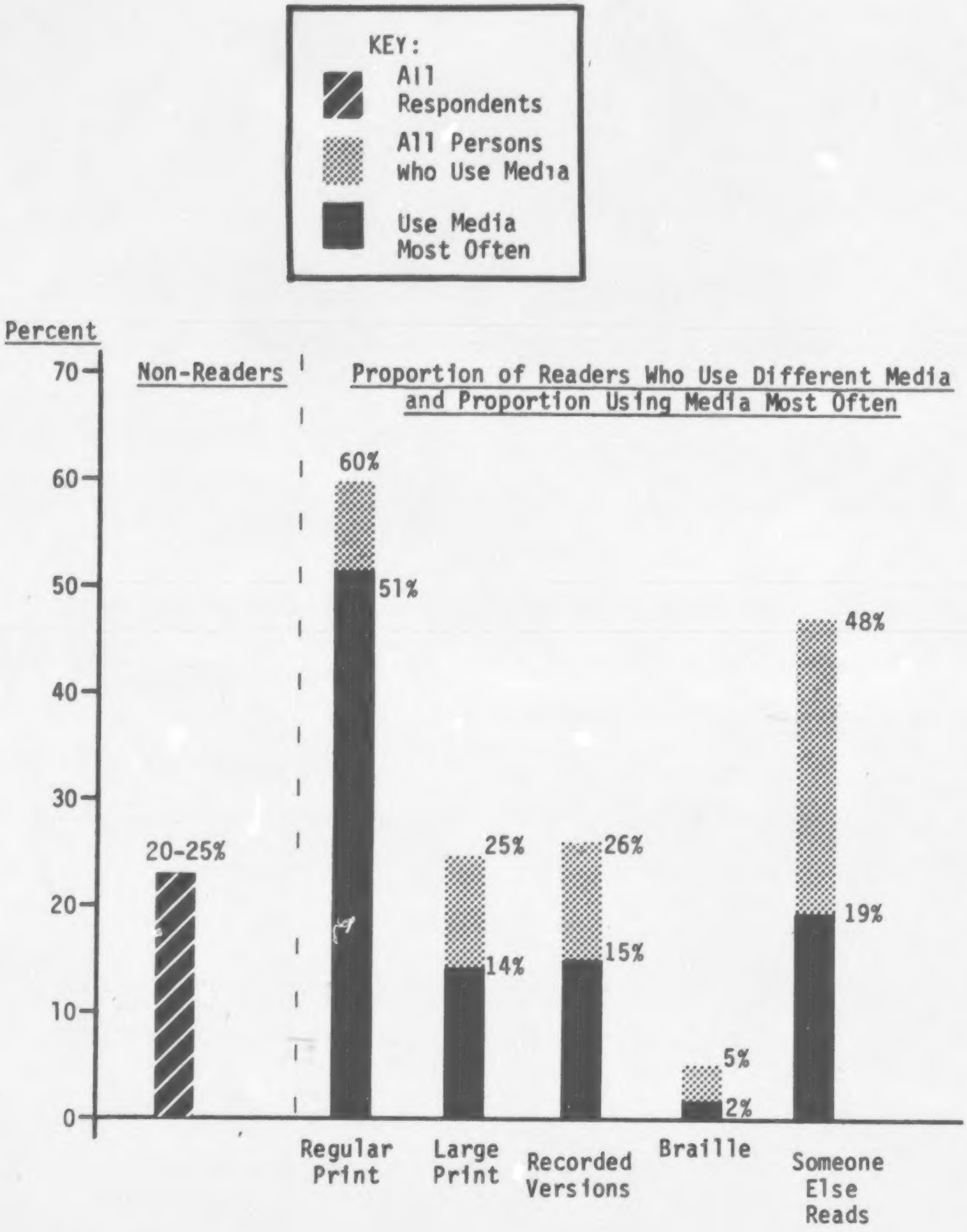

Table 6-5

Media Used for Reading**

	Regular Print	Large Print	Recorded Versions	Braille	Somebody Else Reads	Weighted Sample Size	Percent* of all Readers
Single Media							
	X					(1018)	29
					X	(536)	15
			X			(194)	5
		X				(98)	3
				X		(41)	1
							53
Multiple Media							
	X				X	(329)	9
	X	X				(282)	8
			X		X	(258)	7
	X	X			X	(169)	5
		X			X	(112)	3
	X		X			(107)	3
	X		X		X	(76)	2
	X	X	X		X	(69)	2
		X	X		X	(67)	2
			X	X	X	(61)	2
	X	X	X			(49)	1
			X	X		(30)	1
		X	X			(26)	1
				X	X	(24)	1
Other						(18)	1
							48
Total of Those Who Read	60%	25%	26%	5%	48%	(3561)	101%

*Total across columns adds to more than 100% because of the use of multiple media.

**An "X" indicates that people use this medium to read.

Table 6-6

Detailed Combinations of Media Used for Reading***

	Reads Regular Print	Reads Large Print	Recorded		Braille	Somebody Else Reads	Weighted Sample Size	Percent of Readers**
			Records	Cassettes				
	X	X	X	X		X	(29)	1
	X	X	X			X	(35)	1
	X	X		X		X	(4)	*
	X	X				X	(169)	5
	X		X	X		X	(22)	1
	X		X			X	(46)	1
	X			X		X	(8)	*
	X					X	(329)	9
		X	X	X	X	X	(4)	*
		X	X	X		X	(28)	1
		X	X			X	(31)	1
		X		X		X	(8)	*
		X				X	(112)	3
			X	X	X	X	(39)	1
			X	X		X	(86)	2
			X		X	X	(22)	1
			X			X	(145)	4
				X		X	(27)	1
					X	X	(24)	1
						X	(536)	15
	X	X	X	X			(19)	1
	X	X	X		X		(5)	*
	X	X	X				(15)	*
	X	X		X			(15)	*
	X	X					(282)	8
	X		X	X			(17)	*
	X		X		X		(4)	*
	X		X				(53)	1
	X			X			(34)	1
	X				X		(5)	*
	X						(1018)	29
		X	X	X			(10)	*
		X	X				(11)	*
		X		X			(6)	*
		X					(98)	3
			X	X	X		(23)	1
			X	X			(58)	2
			X		X		(7)	*
			X				(125)	4
				X			(11)	*
					X		(41)	1
Total**	60%	25%	23%	14%	5%	48%	(3561)	100%

* Less Than 0.5%

** Total across columns adds to more than 100% because of use of multiple media.

*** An "X" indicates that people use this medium to read.

Perhaps it is well to remember at this point that braille, like recordings, does not make use of the visual sense. Like print, both braille and recordings are a means of input (reading) and a means of output (writing). One can perform either the input operation, the output operation, or both, but an impairment to any of the senses vital to one of the operations is likely to reduce the motivation to do the other as well. For example, restricted speech capacities, which would obviously limit one's ability to make recordings, might also limit one's desire to listen to recorded speech. Similarly, any limitation restricting an individual's ability to share/utilize the reading experience is likely to reduce the motivation to read and/or write.

Recordings utilize auditory and speech faculties as well as the dexterity to operate the recording equipment. Braille, however, requires a more active participation than reading by listening, and unlike listening, requires a lengthy period of formal training. It depends on dexterity and coordination as well as the tactual sense. One needs both the ability to hold a book, turn pages and sit up, and the endurance to sustain these activities in order to read braille. Thus braille is by far the most demanding of the reading media. It requires energy, touch, rhythm, concentration and active participation on the part of the reader (Foulke, 1979; Olson, 1979). The requirements that the media place upon the reader are perhaps reflected in the average speeds that experienced adults can read with them: print--200-300 words per minute; braille--80-110 words per minute; recordings--

150-200 words per minute; and large print--80-110 words per minute. (Nolan, et al., 1966).*

Most Frequently Used Ways to Read

Of all of the reading media, regular print is the most frequently read medium as well as the one that is in the greatest demand, despite the obstacles to utilizing it. (See Table 6-7 and Figure 6-1.) Just over half of the respondents who read say that they use this medium most often.

In spite of the high frequencies with which the respondents who read print reported limitations in seeing, dexterity, sitting up, and in comprehension and weakness (see Chapter 3), it seems clear that the print readers would rather read regular print for shorter periods of time and with difficulties than switch to other styles of reading. This reluctance to try new media may in part be related to a general lack of awareness and a lack of availability of print alternatives.

Being read to by another person is the second most popular way of reading; 19% of those who read use it most often. Recordings are the third most popular medium in terms of regular use (15%), followed

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*Though we have no data on the comparative levels of comprehension achieved by persons who read with recordings as opposed to braille or print, intuitively it would seem that the comprehension levels would vary more with the difficulty of the materials being read, and the purpose for which the reading is being done--i.e., recreational or informational--than with the reading format employed. However, it may require more concentration to achieve the same level of comprehension by listening as it does by reading braille or print, which are both more active mediums to begin with.

Table 6-7

Most Popular and Second Most Popular Reading Media

	Weighted Sample Size	Most Popular Reading Media Used	Second Most Popular Reading Media Used*
		----- Percent -----	
Regular Print	(1865)	51	10
Someone Else Reads	(680)	19	24
Recorded Versions	(526)	15	8
Large Print	(500)	14	19
Braille	(64)	2	2
None		0	37
Total	(3679)	100	100

* Reflects exclusion of persons who said that they do not have a second most popular medium. May not exactly equal combinations used to read in Tables 6-2 and 6-3 on account of variations in respondents' answers to different questions, lack of surety of proxy respondents, or rounding.

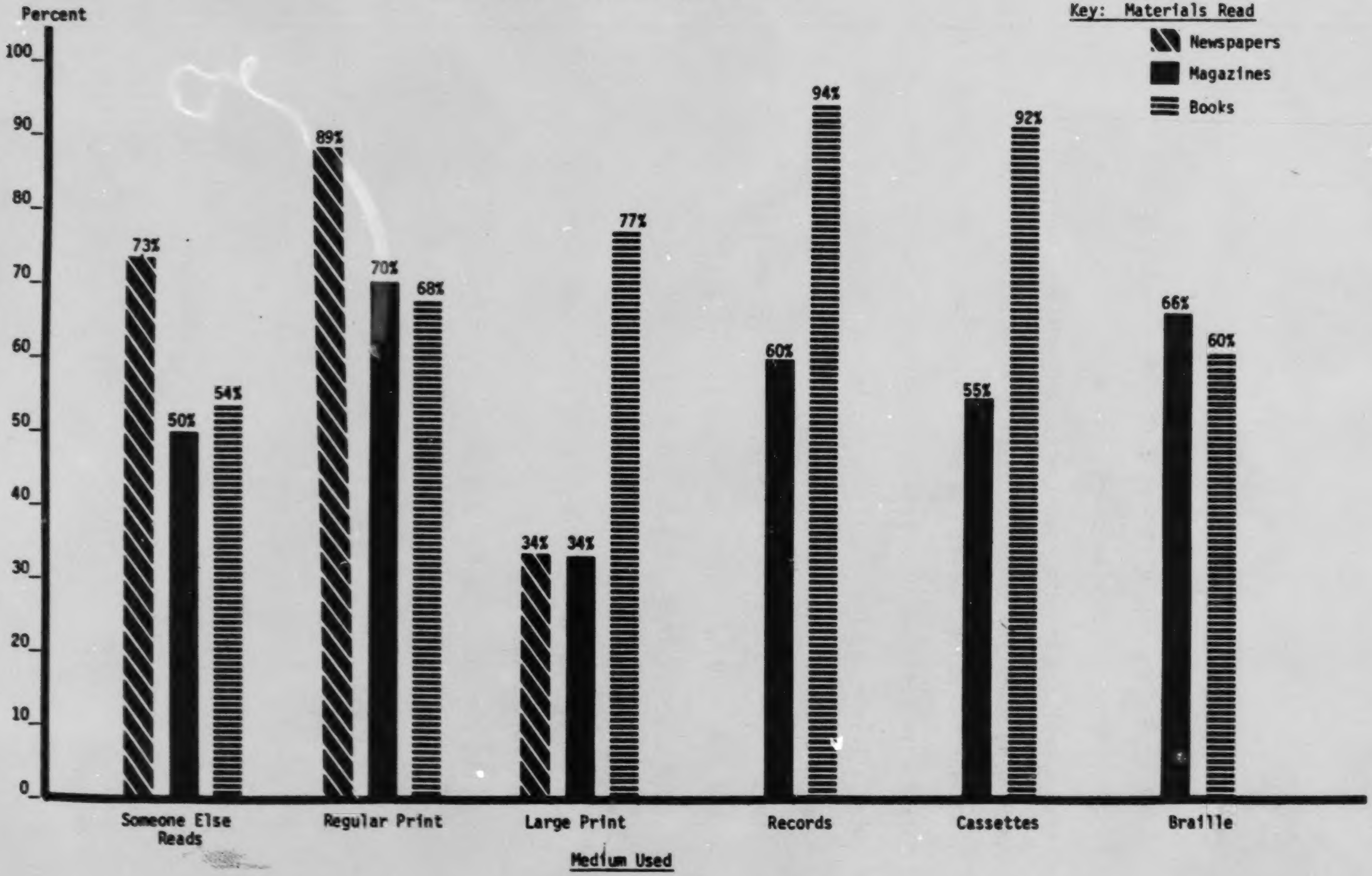
closely by large print (most popular with 14%). Braille is used more often than any other medium by less than 2% of the readers.

Materials Read by Reading Media

In Figure 6-2, we provide data on the relation between the reading media used to read with and the materials read. The regular print readers in the sample clearly prefer the newspaper to other kinds of materials, and the newspaper is the item that is most often read to persons with print limitations by readers. Large print users read significantly more books than magazines or newspapers, which we suspect is due, in part, to the very limited availability of large print periodicals. Listening to books on records or cassettes is about one and a half times as common as listening to magazines. Braille readers use books and magazines about equally--nearly two-thirds of the braille readers use each.

Figure 6-2

Materials Read in Different Reading Media



FACTORS ASSOCIATED WITH WAYS USED TO READ AND MATERIALS READ

Reading Limitations

Types of Reading Limitations--Why do some people choose to read with one medium rather than another? Though we did not explicitly ask this question, the data nevertheless suggest some answers. By examining preferred styles of reading in relation to print limitations, as given in Tables 6-8 and 6-9 and Figures 6-3 and 6-4, we find that braille is rarely used by persons who have any useful vision for close work. Even among the totally blind, braille is much less popular than recordings and sighted readers. Legally blind persons also use braille least, after recordings, sighted readers, and regular or large print. However, the legally blind use braille and recordings nearly twice as frequently as those who cannot see regular print; the latter appear to prefer large print.

All persons having print limitations tend to rely on another person as a reader but this is more prevalent (about 10%) among persons who are unable to perform reading functions than among those who merely have difficulties. The mentally retarded depend heavily upon readers. Regular print is widely used by persons with difficulty in seeing (86% use it and 78% prefer it over other media) despite the difficulties in dexterity, endurance, perception, memory and attention span which often accompany their seeing limitations. (For further details, see Chapter 3.) Large print is also used by persons of all disability types and severity levels and roughly to the same extent.

Table 6-8

Medium Used to Read Most Often Among Persons with Limitations in Reading Regular Print By Type of Limitation - 1977

SPECIFIC LIMITATION	Weighted Sample Size	Total	Regular Print	Large Print	Recorded Version	Braille	Someone Else Reads
				Medium Used to Read Most Often			
		Percent					
Seeing							
No Difficulty	(577)	100	72	6	2	*	20
Difficulty	(1359)	100	78	12	3	*	7
Unable	(1744)	100	22	19	29	3	26
Holding							
No Difficulty	(3090)	100	52	14	16	2	17
Difficulty	(375)	100	50	21	4	*	26
Unable	(214)	100	29	17	19	*	36
Turning							
No Difficulty	(3170)	100	52	14	16	2	17
Difficulty	(315)	100	47	18	2	*	33
Unable	(195)	100	32	14	19	*	36
Sitting Up							
No Difficulty	(3306)	100	52	14	14	2	17
Difficulty	(195)	100	45	24	5	*	26
Unable	(179)	100	24	9	29	*	37
Weakness							
No Difficulty	(2036)	100	54	12	17	2	15
Difficulty	(377)	100	66	19	7	1	8
Unable	(1266)	100	41	17	13	*	29
Learning							
None	(2340)	100	49	13	20	2	17
Perception	(807)	100	55	23	6	1	15
Memory/Confusion/ Attention Span	(369)	100	66	10	4	*	20
Mental Retardation and Other	(163)	10C	21	4	10	1	63

* Less than 0.5%.

Figure 6-3

Severity of Reading Limitations by Primary Way of Reading

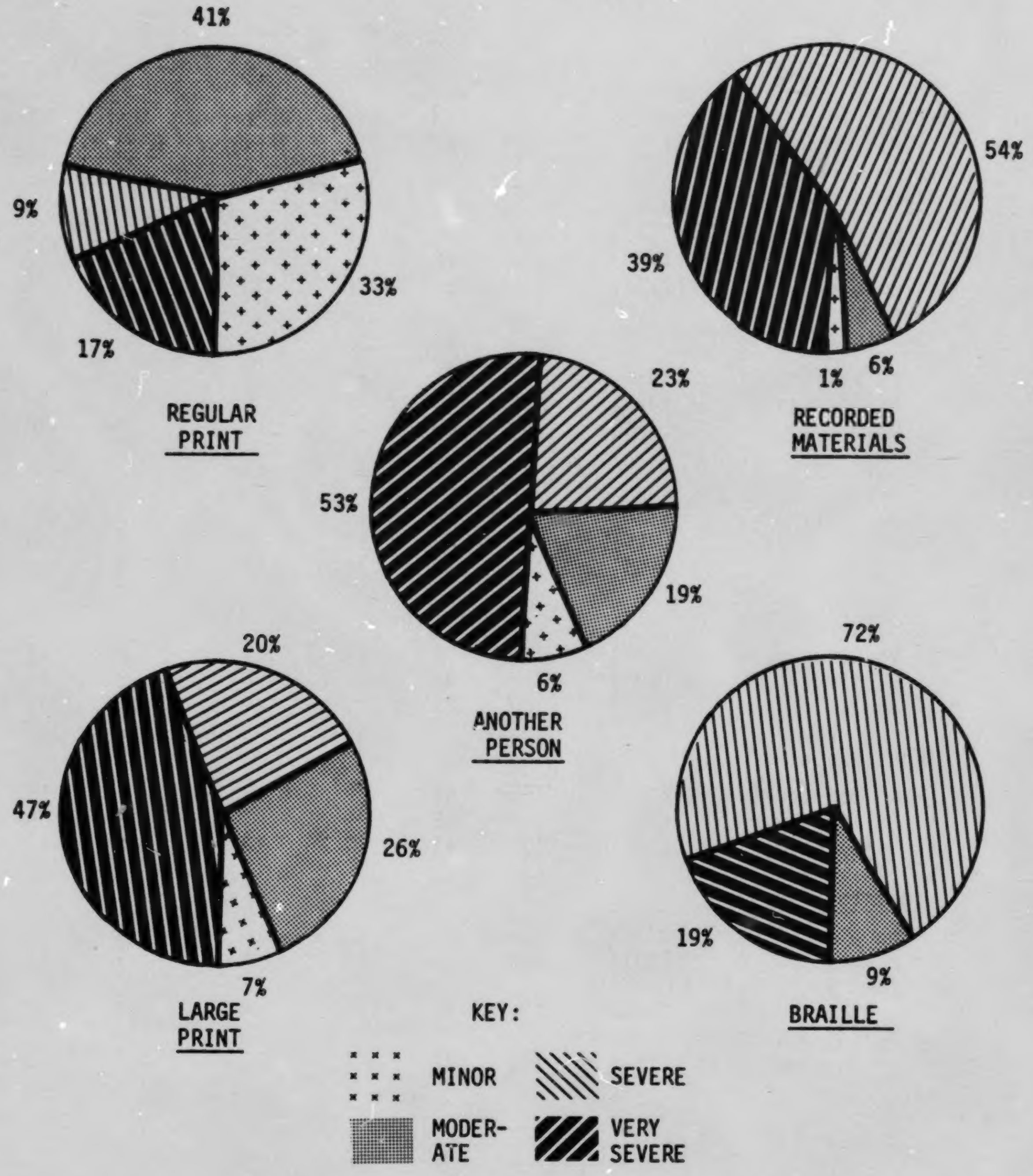


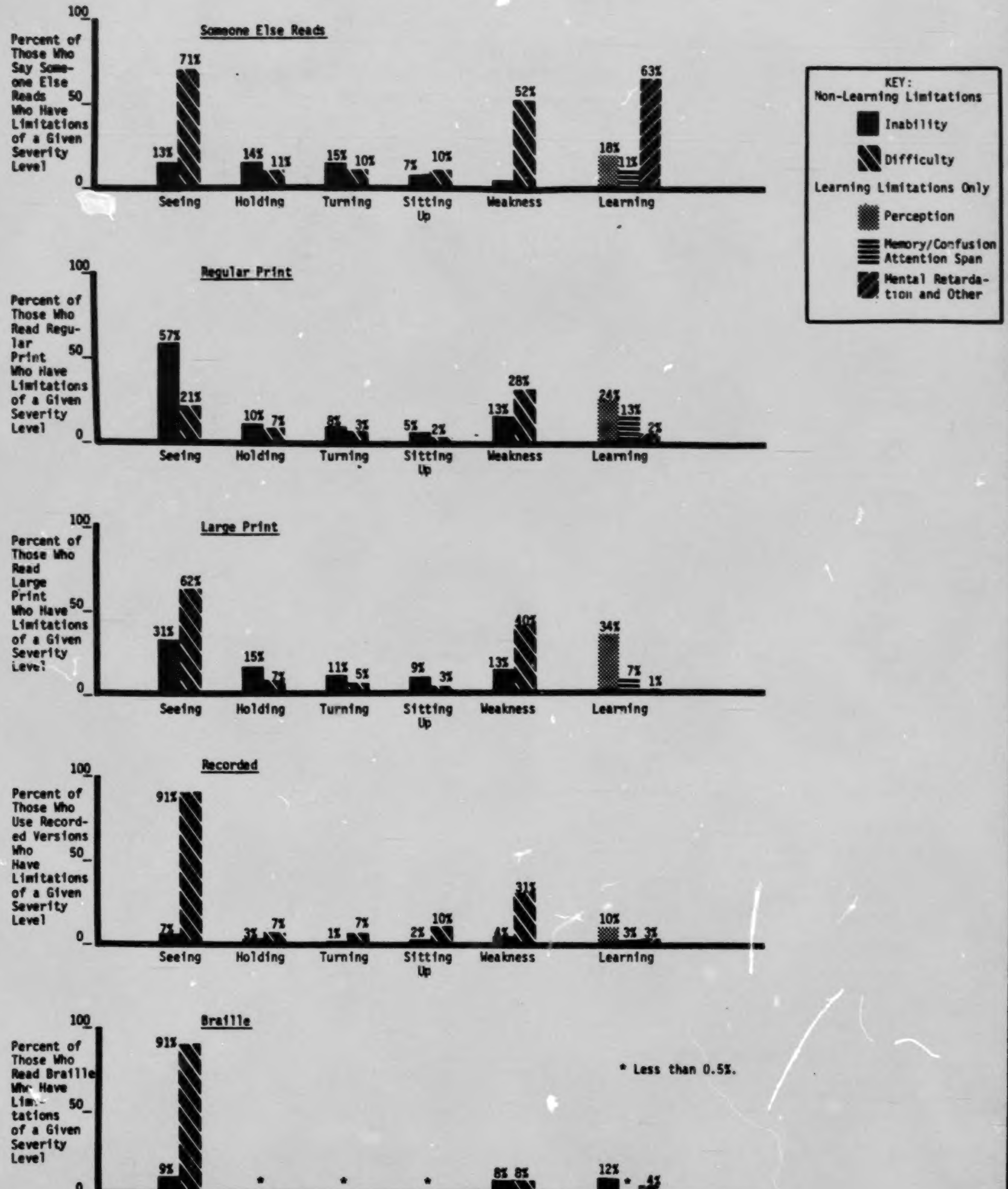
Table 6-9

Ways of Reading By Reading Limitations

		Ways of Reading					
A. SPECIFIC LIMITATIONS	Weighted Sample Size	Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
		Percent					
Vision							
No Difficulty	(543)	57	77	18	17	10	0
Difficulty	(1318)	29	86	27	10	6	1
Unable	(1700)	60	33	25	36	19	10
Totally Blind	(174)	59			65	26	40
Legally Blind	(823)	62	21	15	56	28	18
Holding							
No Difficulty	(2942)	47	60	24	25	12	6
Difficulty	(384)	48	63	31	15	16	2
Unable	(234)	63	43	22	24	14	2
Turning							
No Difficulty	(3021)	47	60	25	24	13	5
Difficulty	(328)	53	64	34	13	13	2
Unable	(211)	61	42	11	24	11	2
Sitting Up							
No Difficulty	(3160)	46	61	25	24	13	5
Difficulty	(210)	61	63	32	18	11	*
Unable	(190)	68	33	14	27	12	4
Weakness							
No Difficulty	(1964)	46	61	24	27	14	7
Difficulty	(369)	40	73	32	14	9	4
Unable	(1227)	54	53	24	22	12	2
Learning							
Perception	(791)	46	68	37	18	10	2
Memory/Confusion/ Attention Span	(359)	62	78	22	19	14	*
Mental Retardation & Other	(153)	88	37	18	26	14	1
B. LIMITATION TYPOLOGY							
Single							
Seeing	(1204)	40	55	22	30	15	10
Learning	(143)	64	77	22	19	11	*
Physical	(286)	32	86	8	12	7	*
Multiple							
Seeing & Physical	(910)	50	49	23	23	12	5
Seeing & Physical & Learning	(604)	49	64	35	17	10	1
Seeing & Learning	(299)	53	65	35	24	16	3
Physical & Learning	(113)	71	64	23	21	9	*
C. SEVERITY OF READING LIMITATIONS							
Minor	(676)	25	89	23	9	5	*
Moderate	(1004)	43	80	28	13	8	1
Severe	(736)	56	31	19	45	22	16
Very Severe	(1144)	61	41	27	27	15	5
D. STAGE WHEN READING DIFFICULTY BEGAN							
Congenital	(632)	65	54	19	34	20	13
Childhood	(138)	69	65	25	20	10	6
School Age	(481)	46	69	28	19	12	5
Early Working Age	(523)	40	70	21	24	12	4
Later Working Age	(787)	43	57	24	21	13	3
Retirement	(842)	45	53	30	20	7	2

Figure 6-4

Reading Limitations of Persons by Primary Medium Used to Read



Records are used more frequently by persons who cannot see than by persons with physical limitations. Cassettes are used less frequently than records by all persons, and (except for those who are unable to see) they are used to about the same extent by persons who have "inabilities" as by those who have "difficulties."

The widespread preference for print despite the physical difficulties many people have in using it was one of the most surprising findings. Of those persons who said that regular print was their primary way of reading, 21% cannot see well enough to read it without special aids, 7% cannot hold books, 3% cannot turn pages, 2% cannot sit-up to read, 28% cannot read for more than a few minutes without fatigue, 24% have perceptual disorders like reversing letters; 13% have problems in memory or confusion, and 2% are mentally retarded or have slow learning type problems. Of course, these may not be mutually exclusive problems, and may be due to a single disorder like a stroke.

Of the persons who use braille as their primary way of reading, 92% are unable to see regular print, and 9% have difficulty doing so. Of those persons who utilize recorded materials, 91% are unable to see; 7% have difficulty holding books and turning pages, 19% cannot sit up to read and 31% have weakness. Table 6-9 and Figure 6-4 provide details on the ways of reading by type of limitation.

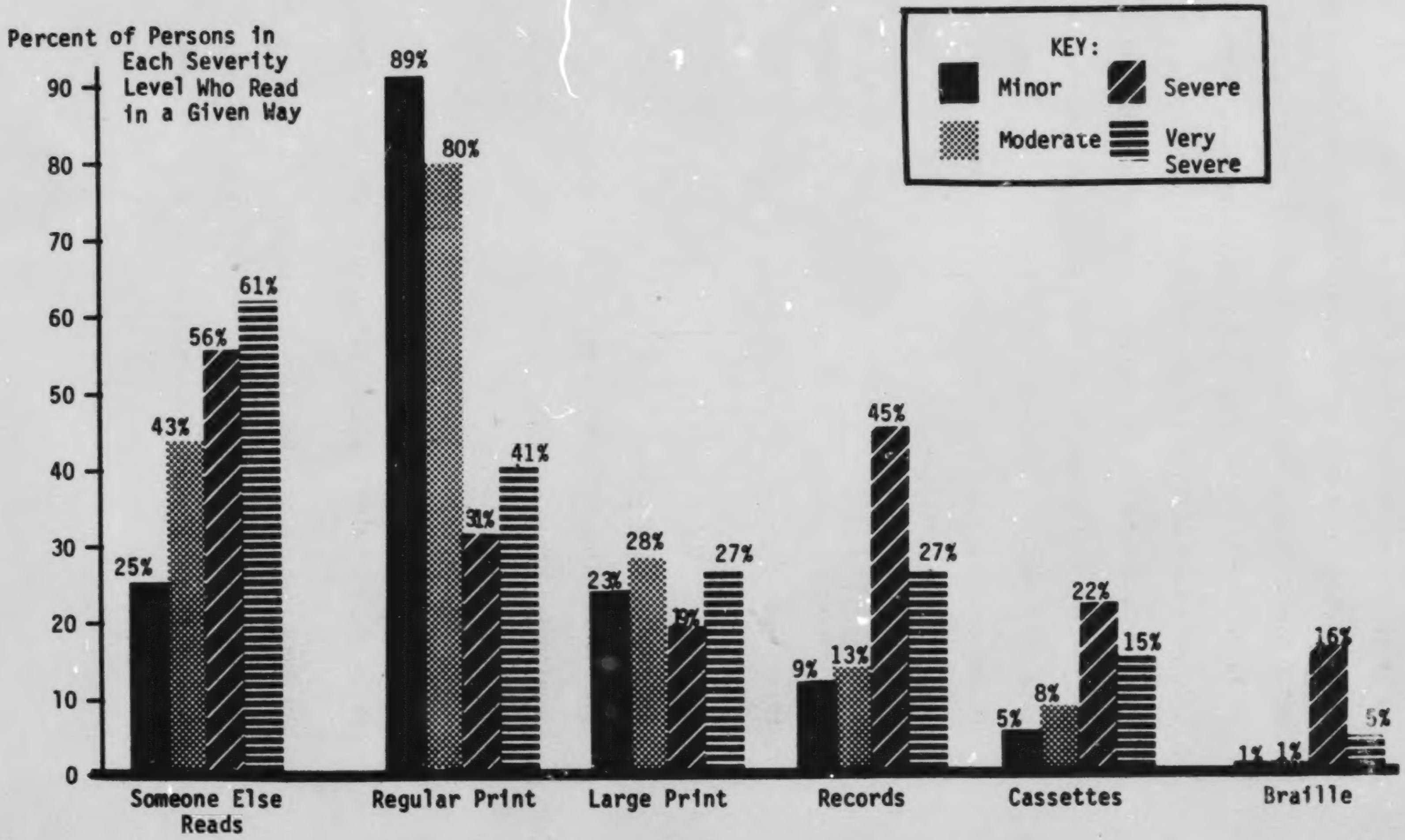
Number of Reading Limitations--The categorization of persons by reading disability typologies in Table 6-9 makes clearer some of the associations between media choice and print limitations on a "person basis." We see, for example, that about two-thirds of the persons with different sets of multiple limitations utilize print and recordings. Among persons with single limitations, there is still the preference for print, but the learning impaired group utilizes readers more often, the seeing impaired group uses recordings and braille, and the physically impaired group reads regular print more often. Large print is used about one-third as often by persons who have single physical limitations as by those who have single learning or seeing limitations.

Severity of Reading Limitations--The effect of the severity of the set of reading limitations on the choice of reading media becomes clearer yet in Figure 6-5. Persons with relatively minor limitations read regular print with the aid of magnifiers and other aids until they are no longer able to. As their limitations become more severe, they begin to rely more heavily on other persons to read to them, and to shift to recordings and braille. However, when their limitations become most serious, they cut down on their use of recordings and braille, but continue to utilize print whenever possible, as some materials are unavailable in any other medium.

Stage in Life at Which Onset Occurs--The stage in life at which an individual's limitations in using print began appears to be important in determining media usage. Braille, for example, is used much more by congenitally blind persons than by persons who

Figure 6-5

Ways of Reading by Severity of Reading Limitation



suffered vision loss at a later stage: the progression is quite pronounced as seen at the botton of Table 6-9. Persons who developed print limitations after the age of 65 are among the most likely users of large print, while persons who developed limitations earlier in life seem much more willing to experiment with recordings and readers. Apart from the fact that younger persons are generally more adventurous and willing to try new things than older persons, it may also be the case that readers are more readily available to younger persons in school settings, and that reading devices like tape recorders or phonographs are less threatening in an environment where there are all sorts of experimental learning aids. Finally, in a school setting reading with recordings may be viewed as a more social and enjoyable activity than it was found to be for the elderly in nursing home and health care settings.

Compounding Limitations

Compounding limitations appear to affect reading styles in the ways previously suggested (see Chapters 3 and 5). This is shown in Table 6-10 and summarized below.

Hearing Limitations--Persons who are hard of hearing use records and cassettes only about half as often as do persons without hearing loss.

Mobility Limitations--Mobility limitations are not associated with the reduced utilization of recorded media, or the use of large print. However, the use of regular print decreases and a commensurate increase in the reliance on readers occurs.

Table 6-10

Ways of Reading by Compounding Limitations and Attitudes Toward Concerns

	Weighted Sample Size	Ways of Reading					
		Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
A. COMPOUNDING LIMITATIONS		Percent					
Mobility							
No Difficulty	(1653)	41	73	25	18	10	1
Some Difficulty	(329)	39	58	34	18	10	4
Needs Aid or Person	(771)	58	39	23	39	20	16
Confined to House	(595)	53	52	23	23	10	3
Confined to Bed	(155)	58	57	22	21	12	3
Hearing							
No Difficulty	(2772)	49	58	22	27	14	6
Hard of Hearing/ Deaf	(789)	45	65	33	14	8	1
General Health							
Poor	(442)	46	55	38	21	10	2
Fair	(1082)	45	59	26	16	8	4
Good	(1010)	50	61	21	28	15	6
B. ATTITUDES TOWARD CONCERNS							
Life as a Whole							
Positive	(928)	42	64	25	24	14	4
Negative	(177)	39	54	18	25	9	6
Personal Health							
Positive	(354)	52	56	28	18	6	5
Negative	(330)	44	68	33	16	8	*
Disability or Appearance							
Positive	(241)	51	55	22	36	21	5
Negative	(474)	61	48	24	33	16	6
Self							
Positive	(432)	57	61	19	26	17	6
Negative	(262)	49	53	28	27	15	*
Responsibilities/Accomplishments							
Positive	(384)	38	63	21	28	18	8
Negative	(168)	48	67	29	25	11	*
Leisure Time Activities							
Positive	(430)	38	66	24	21	8	2
Negative	(120)	57	47	40	20	15	*
Family							
Positive	(707)	57	56	28	22	11	5
Negative	(86)	35	71	22	27	2	5
Mobility							
Positive	(307)	31	60	24	20	5	6
Negative	(287)	49	52	34	22	12	2

* Less than 0.5%.

Health Limitations--Persons who are healthy are more likely to use recordings or braille than either large or regular print. Curiously, large print is considerably more common among persons who are in relatively poor health.

BELIEFS/ATTITUDES

Attitudes toward life as a whole, toward personal health, and toward one's disability do not seem to be very strong predictors of media usage. But an individual's attitude toward his/her social role and use of leisure time do seem to be relatively strong predictors. Positive attitudes about one's responsibilities and accomplishments and satisfaction with one's leisure time pursuits are all highly associated with reading braille. Negative attitudes about one's accomplishments and leisure time activities are associated with the use of large print and readers. Positive attitudes toward family are also associated with the use of someone else to read. These data adduce additional evidence for our hypothesis that a person must feel good about himself/herself to learn braille and good about his/her family to expect family members to be receptive to reading to them. (See Table 6-10.) The other side of the coin is that persons who do not have positive feelings about themselves and their capabilities will not push themselves or take on challenges, but rather will either enlist the help of another person (get someone else to read to them) or opt for the way of reading that is most familiar (namely large or regular print) despite the impediments to using it.

SOCIAL AND DEMOGRAPHIC FACTORS

The data pertaining to the social and demographic factors affecting the choice of reading media are given in Table 6-11.

Predisposing Factors

Age--The most significant finding regarding age is the relatively widespread use of braille among readers in the age group 17-44 years. Braille usage for this group was 13%, compared to 3% among persons 65 years and over and 2% among the school age group 6-16 years. Another notable finding is that use of recorded media declines with age: the rate of cassette use among persons 65 years and over is only half as great as it is among school age children, perhaps reflecting the unfamiliarity and complexity of this medium, the need for special training in its use, or its greater accessibility in schools.

As we saw above, roughly half of the readers in each age group read most often with regular print despite limitations. After reading print, being read to by someone else is the preferred way of reading, and the way employed by more people than any other. Large print is used by about 30% of the respondents in each age group, and is used most often by about 15% of each age group. Recordings are used for regular reading more by adults than children. Braille is the primary way of reading for 2% of the school age children, 4% of the older working age adults and less than half a percent of the retirement age persons. Figure 6-6 shows the most frequently used styles of reading by age.

As well as being a guide to the media used to read with, age

Table 6-11

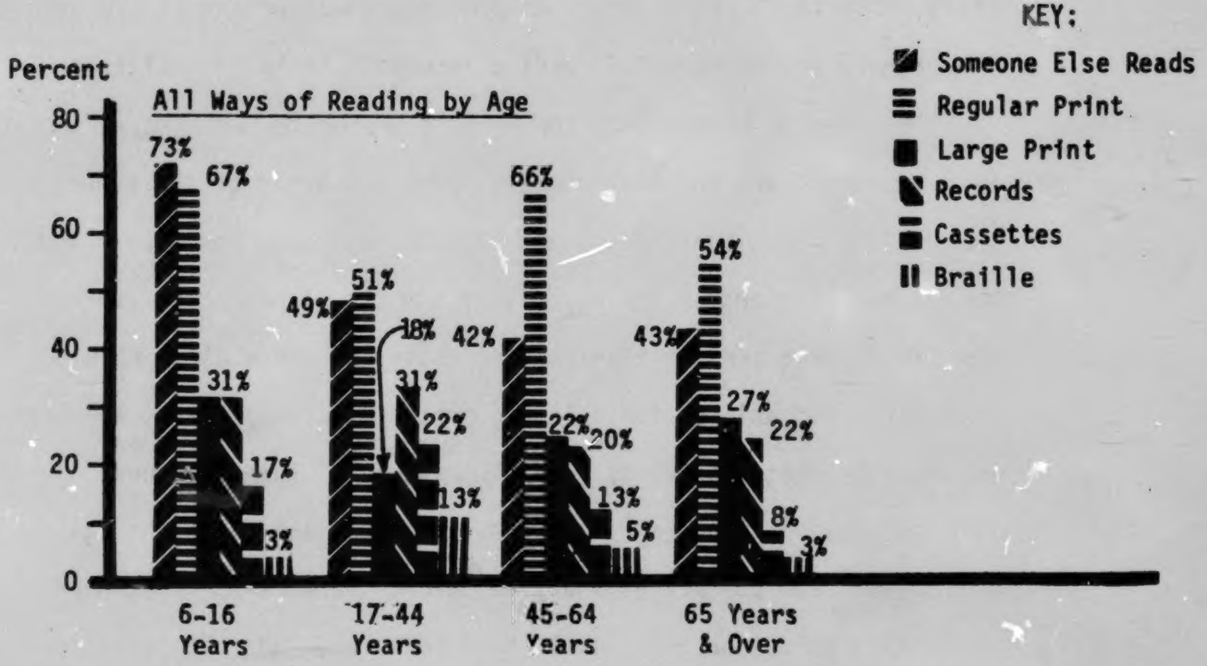
Ways of Reading by Selected Demographic and Social Characteristics of Persons with Print Limitations

		Way of Reading					
SELECTED CHARACTERISTICS	Weighted Sample Size	Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
		Percent*					
Age							
6-16 Years	(550)	72	66	31	30	17	2
17-44 Years	(636)	48	59	17	28	21	13
45-64 Years	(859)	43	65	22	20	12	5
65 Years and Over	(1515)	42	54	28	21	8	3
All Ages	(3560)	48	59	25	23	13	5
Sex							
Male	(1427)	59	54	18	26	16	6
Female	(2106)	40	63	30	22	10	4
Race							
White	(2873)	48	58	26	26	14	5
Non-White	(593)	47	64	21	12	6	4
Education							
Elementary	(1308)	53	64	30	16	7	1
High School	(1194)	42	58	24	22	13	7
College	(1011)	41	59	20	32	21	8
Income							
Less Than $5,000	(1351)	39	60	30	19	10	5
$5,000 - $9,999	(708)	53	55	23	25	8	4
$10,000 -$14,999	(441)	54	56	20	26	14	5
$15,000 - $19,999	(323)	57	72	21	26	16	7
$20,000 and Over	(236)	61	67	22	36	28	5
Social Role							
Taking Care of Home	(1368)	35	67	24	22	11	4
Going to School	(772)	66	60	24	32	21	9
Working	(449)	40	70	20	23	19	7
Looking for Work	(122)	34	60	16	32	12	24
Retired	(1350)	43	56	27	18	9	4
Not Working for Other Reason	(942)	54	53	25	25	14	5
Occupation							
White Collar	(207)	38	65	16	35	27	8
Blue Collar	(215)	40	73	22	14	14	6
Region							
North East	(666)	55	58	21	26	15	5
South	(1378)	49	56	28	18	10	4
North Central	(995)	44	64	27	26	13	6
West	(521)	44	60	20	28	15	6
Place of Residence							
Metropolitan	(2372)	46	60	23	25	14	6
Non-Metropolitan	(1189)	52	58	30	20	9	3
Family							
Self-Respondent	(2249	37	62	25	24	13	6
Family Respondent	(1311)	67	55	24	23	12	4
Living Situation							
Alone	(654)	21	66	35	21	9	4
With Others	(2801)	54	58	20	24	14	4

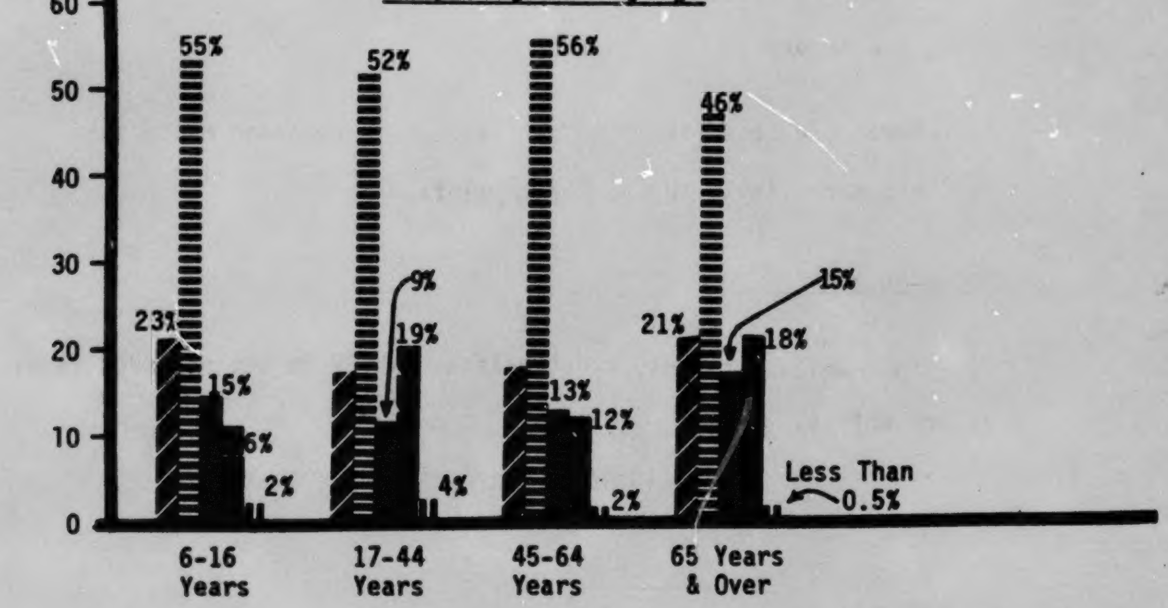
* Percents add up to more than 100% due to the fact that more than one way of reading was reported in each social and demographic category.

Figure 6-6

a. Ways of Reading by Age



b. Ways of Reading Most Frequently Used by Age



is also a guide to the different types of published materials read--i.e., newspapers, magazines, books. These are valuable findings since librarians' reader profiles probably consider age as one of the primary determinants of reading interest, style and ability.

As seen in Figure 6-7, the largest proportion of readers in each age group are non-book readers. But a quarter of the school age children read books only, and only 3% read just newspapers and/or magazines. Persons in the 45-64 year and the 65 years and over age groups have very similar reading tastes on the whole. About one-third read only periodicals and personal correspondence and most of the remaining two-thirds read all materials. Turned around, non-book readers tend to be older persons: 85% are above the age of 45 years and 53% are 65 years and over. Persons who just read books tend to be younger: nearly half (44%) are under 16 years of age, while persons who read books plus other materials are distributed throughout the age groups slightly more evenly, with 39% in the elderly category.

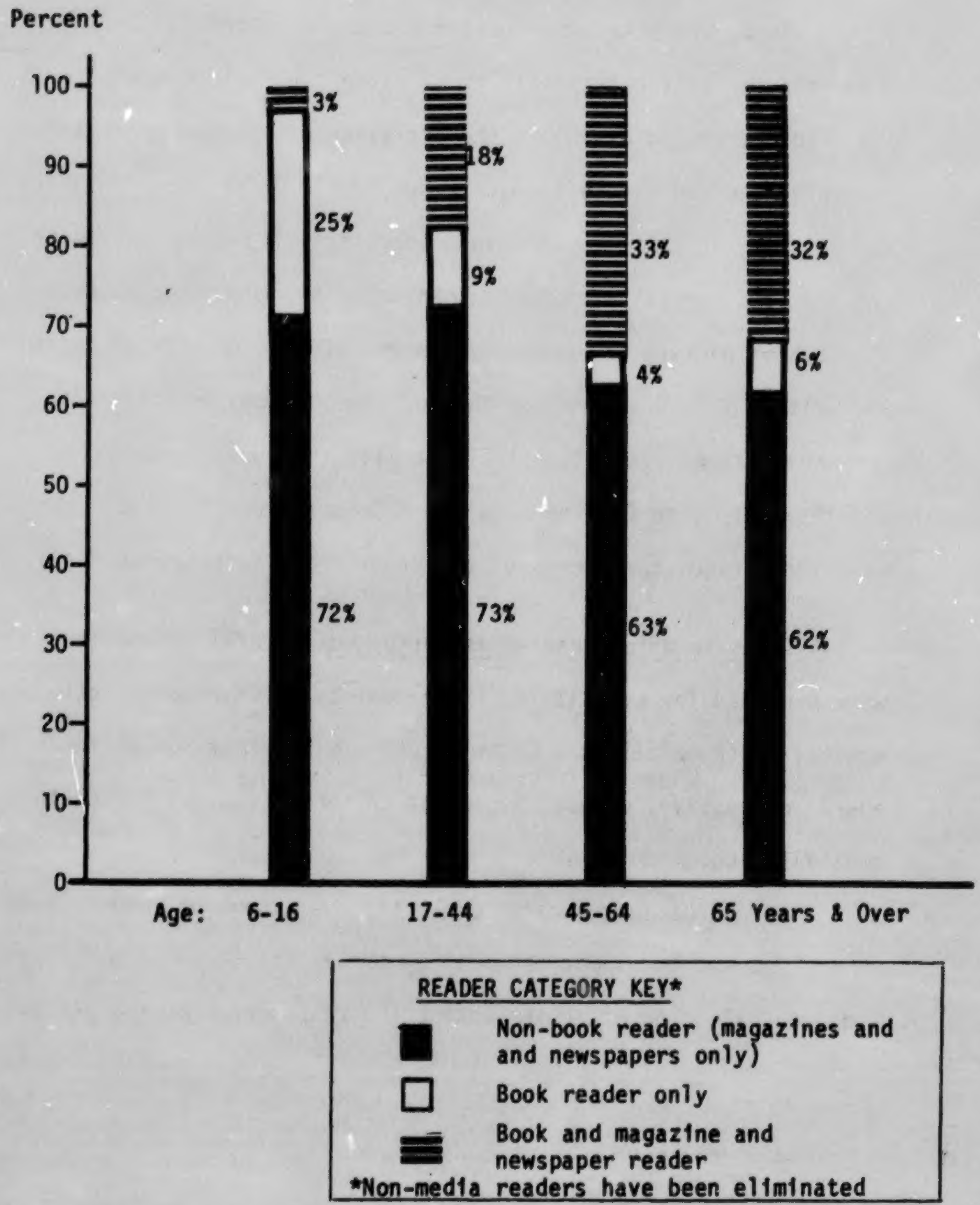
Sex--Women are less likely to use readers or recorded media than men, and more likely to use large print.

Enabling Factors

Race--Non-whites are only about half as likely to use recorded versions as are whites.

Figure 6-7

Published Materials Read (Reader Category) by Age Group



Income--Persons living in households with a higher aggregate income are more likely to use recorded media and other readers; but income is not a factor in the use of braille or large print.

Living Situation--Persons who live with others report a much higher use of readers and a slightly higher use of recordings than persons living alone, who make much heavier use of large print. This is accounted for by the availability of other household members to do the reading, and to assist in the operation of the equipment and/or the selection and acquisition of recordings. Ordering large print periodicals, which is common among persons living alone, seems to require less regular assistance than ordering recordings because the task of picking the ordering numbers off the records or tapes and writing them down, unlike that of reading them is difficult for many persons, particularly those with compounding dexterity limitations. (See Chapter 8 on the NLS subscribers' satisfaction with the various components of the program for further details.)

Social Roles in Which Reading is Performed--Several approaches were explored for classifying the extent to which reading activities are: 1) instrumental as a means to performing other social functions, and 2) expressive, or used as an end in themselves for immediate gratification.

Some approaches, such as exploring the extent of reading done on the job and in school, or probing the extent to which other persons read aloud or otherwise assist the respondents on the job or in school, were quite direct. (Here we postulated that the reading done was instrumental.) Table 6-12 gives examples of this sort of classification and the extent of reading done in private versus group situations. We neglected, however, to determine whether in the group situations the other person(s) was present primarily in order to provide assistance, as when school texts are read, or primarily to share the reading experience, as when a grandparent reads to a young child, or for both reasons. Nor did we assess the occasions for which one medium was preferred over others. These are both issues that might be explored in future research on the social functions of reading.

Working--Persons who are working or going to school appear to use recordings slightly more frequently than persons in other social roles. Persons employed in white collar jobs use recordings more than twice as often as persons working in blue collar jobs, though both groups use braille about equally. Curiously, persons who report that they are looking for work are the most frequent braille users (24% use braille); this group includes a large number of persons who are legally blind and have completed rehabilitation training (one aspect of which is training in the use of braille). Somewhat less than half (41%) of the respondents who are employed read regularly on the job. A quarter (23%) use reading aids on the job, mostly eyeglasses (66%), magnifiers (20%) and tape recorders/players (11%). Of those who employ reading aids at work, one out of six uses another person to

Table 6-12

Examples of Classification of Reading Activities by Function

SITUATION	Instrumental As a Means to Permit Some Other Activity at a Later Time	Expressive As an End in Themselves for Immediate Gratification
Alone:	Self-improvement	Recreational Reading--to pass the time, escape from day's pressures
	Study	
	Information seeking	
	Reading recipes to cook a meal	
With Others:	Parent-child teaching	Parent-child sharing
	School situations	
	Work situations	
	Use of Print Reader to help pay bills	Use of Print Reader to read letters
	Participation in voting and activities related to the political process and civic responsibilities	Participation in church

read to them. The respondents rarely reported using devices like braille writers; but it may be that some special communication aids have become such a fundamental part of the respondents' lives that they are not even thought of as reading aids. (See Table 6-13.)

Going to School--About 15% of the respondents were attending schools or in training. Nearly a third of those in school or training (30%) reported receiving training in special reading techniques, such as basic reading skills, phonetics, word recognition, spelling and memory exercises, eight percent reported learning braille, and 5% reported learning how to use recordings or the Optacon.*

Forty percent of those who are in school or training specifically for their reading limitation(s) are using reading aids. Again, the largest proportion of aids are eyeglasses (61%), followed by tape recorders (27%), magnifiers (3%) and closed circuit television (CCTV) (3%). Braille slates and writers were reported by only two percent. Eight percent of those in school or training who use aids reported using "other persons" as readers. (See Table 6-13.)

Educational Attainment

The more highly educated respondents are, the more likely it is that they use braille and recorded media. The use of large print

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*The Optacon is an electronic device that scans print and converts the letter patterns to tactile impulses that are read on one finger.

Table 6-13

Reading on the Job or in School/Training

	Weighted Sample Size	Percentages
A. USUAL SOCIAL ROLE		
Going to School or in Training	(1096)	15
Working	(368)	12
B. READING ON THE JOB		
- Reads Regularly on the Job	(903)	41
- Uses Reading Aids on the Job	(894)	23
Aids Used*	(206)	
Lenses		66
Magnifiers		20
Other Person as Reader		16
Tape Recorders, Record Players, Accessories		11
Braille Slates, Writers		1
C. READING IN SCHOOL OR TRAINING		
Uses Reading Aids in School or Training	(1104)	40
Aids Used*	(442)	
Lenses		61
Tape Recorders, Record Players, Accessories		27
Other Person as Reader		8
Magnifiers/Telescopic Aids		3
CCTV		3
Braille Slates, Writers		2
Other		6
Learning Special Reading Techniques to Compensate for Reading Limitations	(1032)	30
Techniques Being Learned	(334)	
Basic Reading Skills		35
Phonetic Skills		9
Word Recognition		4
Comprehension/Spelling/Memory		9
Braille		8
Using Recordings		3
Using Optacons		3
Others		12

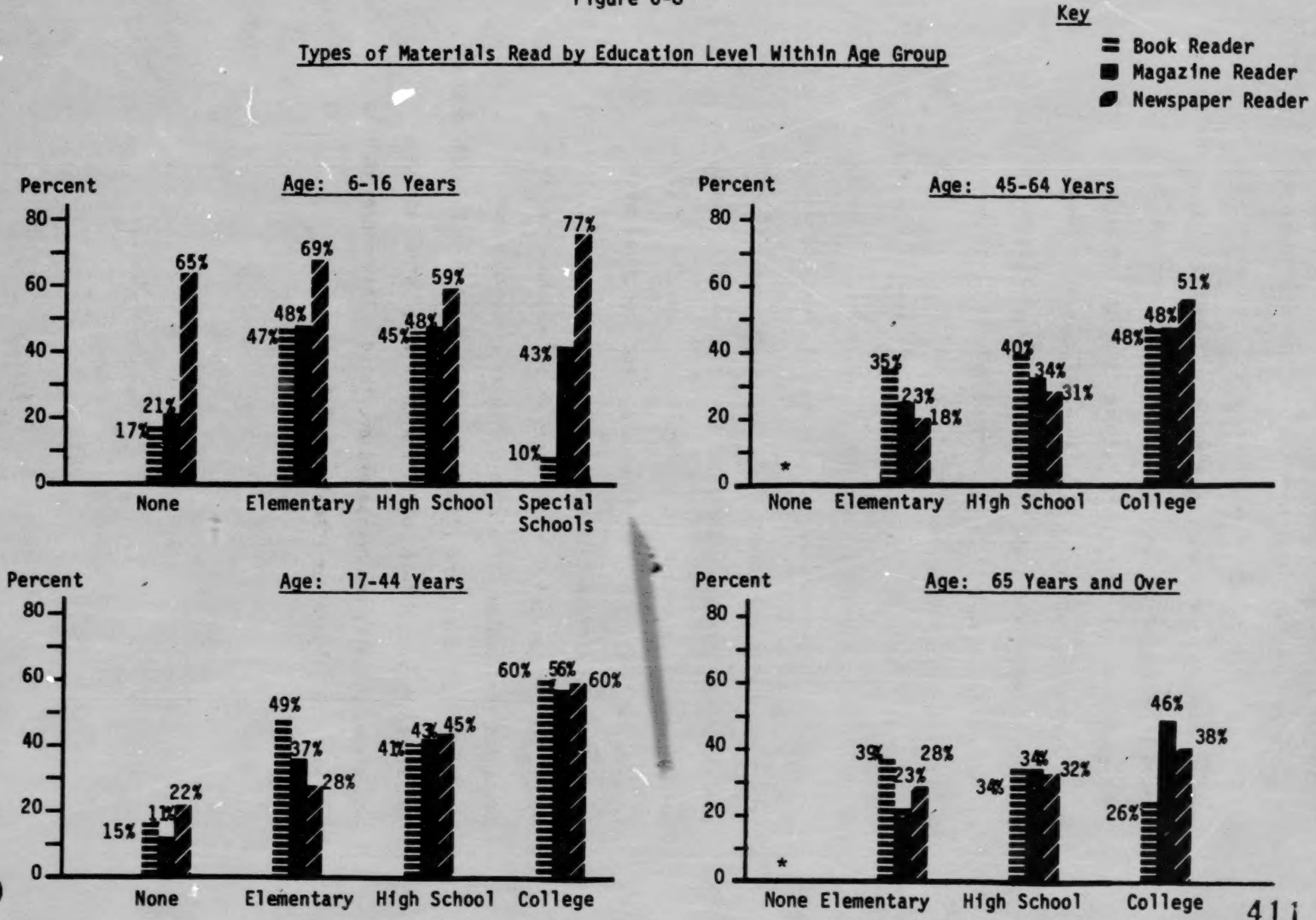
*Adds to more than 100% because multiple aids are used.

and other persons to read is more frequent among persons whose education did not go beyond elementary school, and as we noted before, among persons who are lacking in self-esteem. The connection between self-respect or feelings of fulfillment with what one does (both as a profession and during leisure time) and educational level is not surprising, and so it makes sense that we find the same division between persons who read with braille or recorded media, and persons who read with large print or rely on other persons to read to them. These data are given in Table 6-11.

Perhaps a more helpful guide to library needs than preferred media choice by educational attainment (Table 6-11) or preferred reading material by age (Figure 6-7) is material choice by educational attainment within age groups. That is, college-educated persons aged 45-64 may be reading different things than college-educated persons aged 65 years and over. Figure 6-8 shows the relative frequency with which persons in each age and education group currently read different materials. We see, for example, that 65% of the persons between 6 and 16 years of age who have had no formal education read books; 69% of those with an elementary school education read books; and 77% of those in special schools read books. Magazines are second in popularity with this age group across educational levels, and newspapers are third. This corresponds to the national picture for school age children.

Figure 6-8

Types of Materials Read by Education Level Within Age Group



*insufficient data to present

Among adult readers, some fairly consistent patterns emerge within educational levels. In the 17-44 age group about 60% of the college attendees read newspapers, magazines or books, whereas only slightly over 40% of the high school attendees read any of these materials. But when we look at the age group 45-64 years we see that in general the incidence of reading has fallen off for each educational level; this trend is most pronounced for book- and magazine-reading. For both the 45-64 age group and the 65 and over age group, the incidence of newspaper- and magazine-reading seems to remain stable among those with a high school education or less, but among college attendees reading newspapers and books declines for these age groups.

Community Factors

Region/Place of Residence--No wide regional variations in media usership are observed. The South, however, ranks toward the lower end of the utilization spectrum for braille and recordings, as do non-metropolitan areas, where persons more frequently use large print.

Summary - Choice of Reading Media

At the outset of this section, we noted the close connection between the materials actually read and the medium in which the materials are read.

Here, again, what is striking about the usership patterns for the different reading media is that persons with print limitations seem, for whatever reasons, to prefer either to read with what they already know--regular print--or to rely on others to satisfy their reading needs. This suggests that print alternatives of materials which persons wish to read are unavailable, or are still a relatively unknown quantity, or are known and unacceptable for many persons with print limitations.

The problem of inadequate information occurs on many levels: many people who might enjoy listening to recorded books and magazines if they knew about them may be unaware of the NLS service; or they may not know if they are eligible for it; or they may be in the dark as how to apply to the program. Apart from these problems, many people may simply find it too difficult either to order books or to use braille, records or cassettes, and therefore settle for reading less, but reading in a way that is comfortable. This speculation is supported by the fact that the reading medium which requires the highest degree of initiative, skill and basic competence--braille--is the most frequently used medium for only two percent of the respondents who read.

Our findings clearly show that:

1) The incidence of reading different types of materials increases broadly with the increase in educational levels.
2) There are declines in the incidence of reading within educational levels among older persons.

These declines are most pronounced with respect to book-reading. These findings suggest that in selecting reading materials, the NLS needs to attempt to make available a full range of periodical literature and books tailored to each level of reading skill.

D. DECLINING USE OF BRAILLE

Braille is a dynamic input/output system which has many of the attributes of print, such as being a primary means of achieving literacy, facilitating rapid recall and scanning, and being a private and personal means of communication, that more passive ways of reading, such as listening to another person or to a recording, lack. These are especially important advantages for children who are just beginning to learn to read. (See Chapter 1.)

However, braille is like a foreign language in that it is difficult to learn and easy to forget if it is not used regularly. Many visually impaired persons, especially adventitiously blind adults who learn braille at rehabilitation centers later in life, use braille infrequently and only for select purposes, such as note-taking and labelling clothing, containers and so on. For recreational or informational reading, print in conjunction with optical aids, recordings or sighted readers is preferred. As many as 41% of the persons who read braille also use magnifiers.

Among persons who are totally blind, sighted readers are used most often by 28%, records are used most often by 60% and braille is the primary reading medium for 11%. For the second most popular way to read, 36% specified another person, 7% said recorded materials, 23% said braille, and 34% reported that they had no second most popular way of reading. So even among the totally blind, braille is not regularly used by more than about one-third of the population.

Among the legally blind, braille is used most often by five percent, recordings are used most often by 48%, sighted readers by 22%, regular print by 16%, and large print by 10%. Braille is the second most frequently used medium for 8%, sighted readers for 32%, recordings for 15%, large print for 12% regular print for 4%, and 29% did not specify a second most popular way to read.

Based on our estimates and preliminary results from an independent study (Berkowitz and Suhr), upwareds of 60,000 persons, and possibly as many as 100,000 persons use braille. Another 70,000 or so persons who are presently reading in some manner have had training in braille at one time or another, but are no longer using it. Additionally, a few thousand persons are currently learning braille but do not feel sufficiently comfortable with it yet to read with it. So slightly less than half of those persons who have learned braille are using it in one form or another, and of these persons who use braille, between one-fifth and one-third (20,000] read braille materials supplied by the NLS. To put these numbers in perspective, recall that we estimated a prevalence of about 500,000 legally blind persons and about 105,000 totally blind persons in the country. As we have said, among the totally blind, perhaps one-third presently use braille, and the rate of braille use among the legally blind is likely no more than 15%-20%.

Among the most significant reasons why individuals reported that they were no longer using braille were: they had problems with braille--it is too difficult to use--(31%); their physical condition--including their concentration, dexterity, strength and tactual sensitivity--had deteriorated (23%); and their sight was not poor enough (20%).

Thirty-eight percent of the totally blind who stopped using braille said they did so because of problems they had in using it, and 35% said their condition was too serious. These were also the first and second reasons given by the legally blind for discontinuing usage. (See Table 6-14.)

Table 6-14

Reasons for No Longer Using Braille

REASON	PERCENT*
Too Busy/Not Interested/Life Style Change	23
Sight is not Bad Enough	21
Physical or Emotional Problems	18
Prefer Other Ways to Read	17
Learning Problems or Learning Now	15
Difficulty Obtaining Braille	6
Other	9

Weighted Sample Size = 159

*Percents add up to more than 100% because of multiple answers.

Trends in Use of Braille Among Legally Blind School Children

The relatively low interest in braille among the visually impaired will be discussed more fully in Chapter 8, but it is valuable to point out here that braille usage appears to be declining even among the most significant braille user group--the country's 30,000 legally blind school children. Our analysis of reading trends among legally blind persons attending public and special schools shows the following for the period 1963 and on:*

(1) The total number of legally blind school age children has increased from 17,000 in 1963 to 29,500 in 1978;

(2) The number of legally blind multiply-impaired school age children has increased dramatically from about 1,500 in 1963 to 13,000 in 1978--in part this increase is explained by the fact that many of these children have learning disabilities and did not attend school until fairly recently, when schools or classes for children with learning disabilities became more widespread;

(3) The number of children in schools for the blind has remained relatively constant at 7,000 while the number of children attending public or special schools operated by state departments of education has increased from about 9,000 in 1963 to 22,000 in 1978;

(4) The number of legally blind school children who read only braille has decreased from 9,000 in 1963 to 5,200 in 1978; the proportion of persons who read only braille has declined about linearly over time from 52% in 1963 to less than 18% in 1978;

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*This analysis is based on data obtained from the American Printing House for the Blind (APH). APH has a contract from the Office of Education to supply reading materials to legally blind school children and prepared summaries of state registrations called the APH, "Distribution of Quota Registrations by School Grads and Braille and Large Type Reading," Louisville, Kentucky, 1963-1978. The above data exclude adults and postgraduates.

(5) The proportion of children reading only large print has remained constant at about 44%, which means that the actual number of persons who read just large print has increased;

(6) The proportion of children reading both braille and large print has remained constant at about 4%, hence, the actual number has increased;

(7) The proportion of children who read regular print, listen to recorded versions of books and magazines and use sighted readers, and who never use braille or large type, has increased almost linearly over time from 1% in 1963 to 36% in 1978.

Summary - The Future of Braille

In assessing the data that we have presented on the use of braille and that of other researchers (Willis, in press; Kirchner, Peterson and Suhr, 1979; Nolan and Bott, 1971), one needs to keep in mind that only a small fraction of the materials that regularly appear in print ever get transcribed into braille. Press braille (more than 500-1000 copies of a print manuscript) and short run braille (less than 500 copies of a print manuscript) materials are also very likely to be unavailable for months or even years after the printed versions appear. Magazines in braille, however, appear more quickly, as do recordings of magazines. One of the reasons for the untimeliness of braille is the very fragmented system of braille production, and the costliness of the production process owing to the low demand for it. The major cost of preparing braille is the expense of the initial input of print information into braille. This is usually achieved by manual keying--whether a braille run is one copy or 1000 copies. With the advent of mainstreaming of legally blind children into public schools, the teaching and use of braille has become more episodic among those who might read with it most, despite the recent availability of improved teaching materials.

The active braille reader must rely on someone to transcribe print materials into braille on a personal or custom basis. The blind professional, even one quite adept in braille, cannot really do without a sighted reader. So active braille readers must also utilize other ways of reading, as we have found they do. Our data show that over 60% of the congenitally blind utilize braille fairly intensively. But, again, the general situation is that over a third of the braille readers utilize it only for note-taking. This is also borne out by data from another survey by Berkowitz and Suhr (forthcoming). In our study, among persons who currently read braille, less than half use this medium most often. Half of the braille users read regular print or large print too. Only a fifth of braille readers depend exclusively on this medium.

One hopes that the potential loss of this essential means of achieving literacy for visually impaired persons can be averted, but a future involving the expanded use of braille does not look bright, despite the growing number of technical innovations for producing braille. (See Clark, 1978 for a full discussion of the future of braille.) It appears that braille has become the primary means of reading for a very small, hard core group of persons who cannot do without it for school and professional use, but only for this group. This will probably continue to be the case unless a timely system of transcribing into braille a whole gamut of materials which meet personal needs more fully evolves.

E. AMOUNT OF TIME SPENT READING OR LEVEL OF READING ACTIVITY

We thought that the amount of time spent reading would be a better guide to the level of reading activity of this special population than, for example, the number of books or magazines read, since the majority of respondents are read to by someone else and, consequently, may not always be aware of whether it is a book, magazine or newspaper that is being read. Because they may not be initiators of this kind of reading, they may also have a poor sense of how many items they have read during any given span of time.

Another reason for considering the time factor rather than the number of books read, in determining the level of reading activity, is that the reading speeds of persons with reading limitations vary much more than the reading speeds of persons who do not have print limitations. This is so because there are more variables to consider. For example, speeds of reading braille (typically 90 words per minute), reading by listening (typically 175 words per minute), and reading print with magnifiers or by oneself vary greatly with the skill of the reader, the extent of the limitation and the type of medium one chooses to read with.

One final factor which complicates the issue of how much reading is done if one computes the number of books read rather than the amount of time spent reading, is that of how one determines which books a person actually reads and which are begun and then set aside essentially unread. "Circulation," or the number of books or magazines read in whole or in part, which is typically employed as a measure of the amount of reading done by sighted readers who use regular print, is ill-suited as a guide to the amount of reading done by persons who read print alternatives. In part this is so because, unlike readers in the general population, persons with print limitations are generally unable to scan books beforehand to determine if they want a given selection. Rather, many persons with reading limitations have books selected for them by someone else. In many cases, a library user may skim through a book and then discover that he/she is not interested in reading the book. Obviously, the mere fact that an individual borrows a book from a library does not mean that he/she has actually read it.

For all of the above reasons, persons who read in the past four months were classified by the amount of time spent reading weekly, and not by the number of books read, or the number of books circulated. Four levels of reading activity were identified:

Light Readers

1. Sporadic Readers - persons who read up to three hours a week (up to about a half an hour a day). 38%
2. Occasional Readers - persons who read between four and seven hours a week (between a half an hour and an hour a day). 30%

Heavy Readers

3. Regular Readers - persons who read between eight and fourteen hours a week (between one to two hours a day). 19%
4. Avid Readers - persons who read more than 14 hours a week (more than two hours a day). 14%

We consider people who read more than an hour a day to be "Heavy Readers" and the others to be "Light Readers."

Motivation, Materials Read and Level of Reading Activity

According to the 1978 Yankelovich study, the major gratifications of, and motivations for reading are different for book readers than for non-book readers in the general population. Yankelovich found that book readers are motivated both by pleasure (74%) and the acquisition of general knowledge (75%), while non-book readers look to reading less as a source of pleasure (29%) or relaxation than as a source of spiritual/religious inspiration, or as a means of escape. Reading newspapers and magazines is more frequently oriented to keeping up with things and gaining knowledge (59%) and filling time. Men seem more oriented to reading for general and specific information (for 48%, these are the most important reasons) than women (32%), and women are more concerned with reading for pleasure and relaxation (41%) than are men (25%).

We did not specifically examine the motivations for reading among persons with print limitations and the means by which they were satisfied, but assuming that they are comparable to those found in the general public, we might be able to say something about their motivations for reading in view of the materials that are read and the amount of time spent reading each type of material.

It was quite surprising to find that among persons with print limitations, slightly over half of those persons who read only books apparently find it just as easy to pick up a book and read a few pages as persons who read only magazines or newspapers find it to read an article, or as non-media readers find it to read a letter: in these three groups, 53% of the respondents read for under half an hour a day, 31% read between half an hour and one hour a day, 12%

read between one hour and two hours a day, and 5% read for more than two hours a day. Two-thirds of the persons who read only newspapers read for less than half an hour a day. These data are shown below and in more detail in Figure 6-9.

	Weighted Sample Size		Reader Activity				All Readers
		Total	Sporadic	Occasional	Regular	Avid	
			percent*				percent
Non-Book Reader	(1011)	100	53	3	11	5	30
Book-Only Reader	(280)	100	54	28	14	4	8
Book-Plus Reader	(2081)	100	30	29	22	19	61

The above three groups account for 40% of the print-limited readers. In none of these cases do readers seem to be interested in spending much time reading, though perhaps it is rather that they are physically unable to do so. It appears then, at least on the surface, that these groups are mainly interested in reading to perform the functions of daily living, to acquire information and to fill time.

About a third of the persons with print limitations who read, or after discounting non-readers, about a quarter of all respondents read for more than an hour a day. For these "Heavy Readers," reading seems to be an activity which is both easy to accomplish (providing the necessary assistance is available), and is associated with the pleasure motivation as well as information seeking. In many instances, as we shall discuss, the voluntary interest in books as a source of enjoyment, and as a source of information for school- and work-related activities, had

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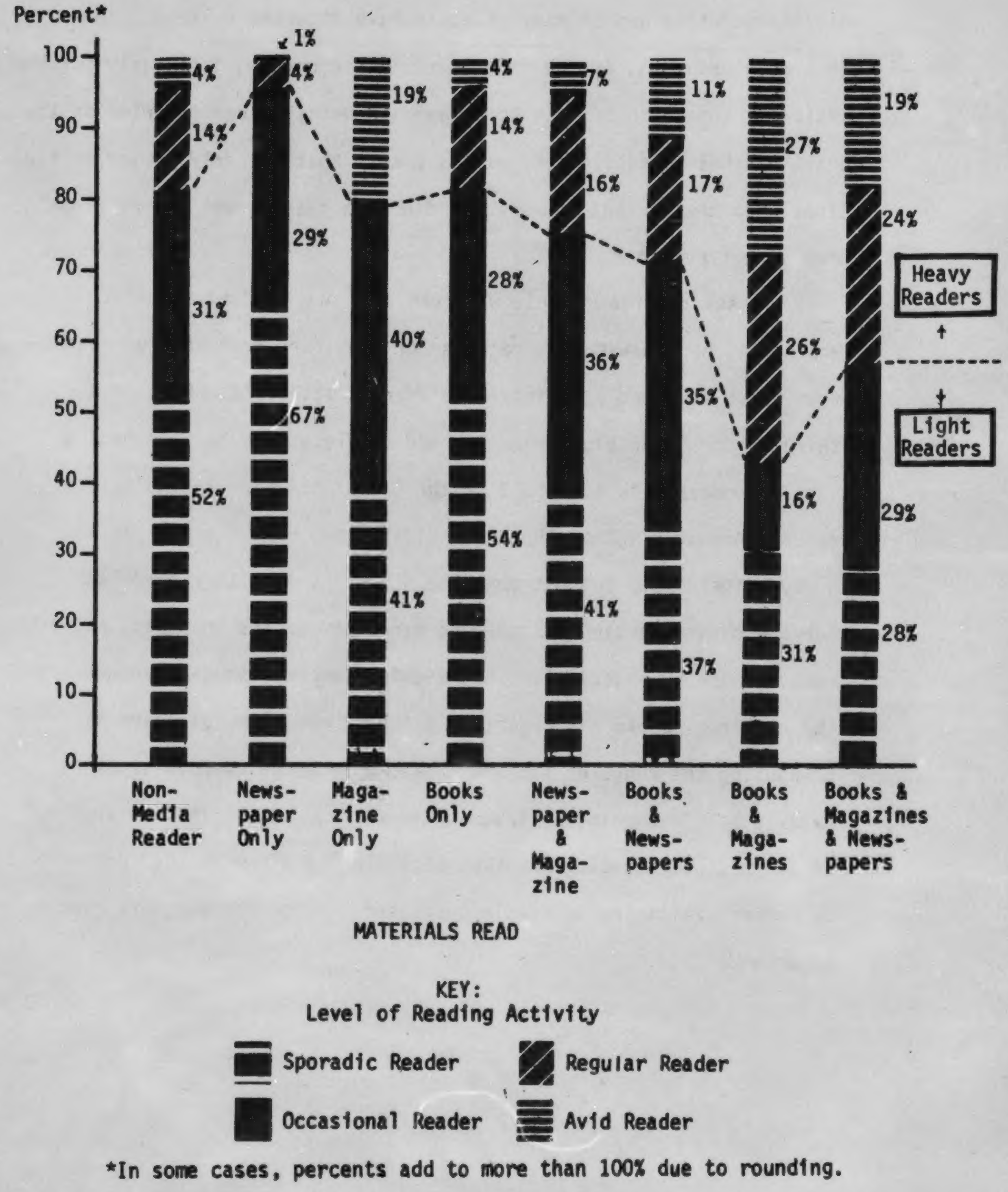
*May not add to 100% on account of rounding.

Figure 6-9

Level of Reading Activity by Materials Read



*In some cases, percents add to more than 100% due to rounding.

developed either from childhood reading experiences prior to the onset of a print limitation, or from a lifetime of non-print reading. The adult who is a heavy book reader appears to have read quite a bit over his/her lifetime and in many cases to have attended college. The "Non-Book" readers, on the other hand, whose reading is largely informational, appear to be less accustomed to using libraries prior to the onset of their disabilities. It is likely that the only period in their lives when the current non-readers did much reading was during school, when it was required.

To sum up then, people who read only one kind of material, whether it be a newspaper, magazine or book, are much lighter readers than those who read a variety of different materials. Roughly a third of the "Book plus" readers read for less than half an hour a day, as compared to over half of the "Book only" or "Periodical only" group. And over 40% of the "Book plus" group read for over an hour a day. These data suggest that the NLS might look to expand its service by interesting its current magazine readers in books, and its book readers in magazines. This might be accomplished by increasing the number of books and magazines which it now circulates and by broadening the range of subject areas represented by both types of materials. (This point is taken up in further detail in Chapter 8.) Of course, realism dictates that attention be given to the network libraries' abilities to handle increased service and adequate funding to provide this.

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Relation Between Ways of Reading and Time Spent Reading

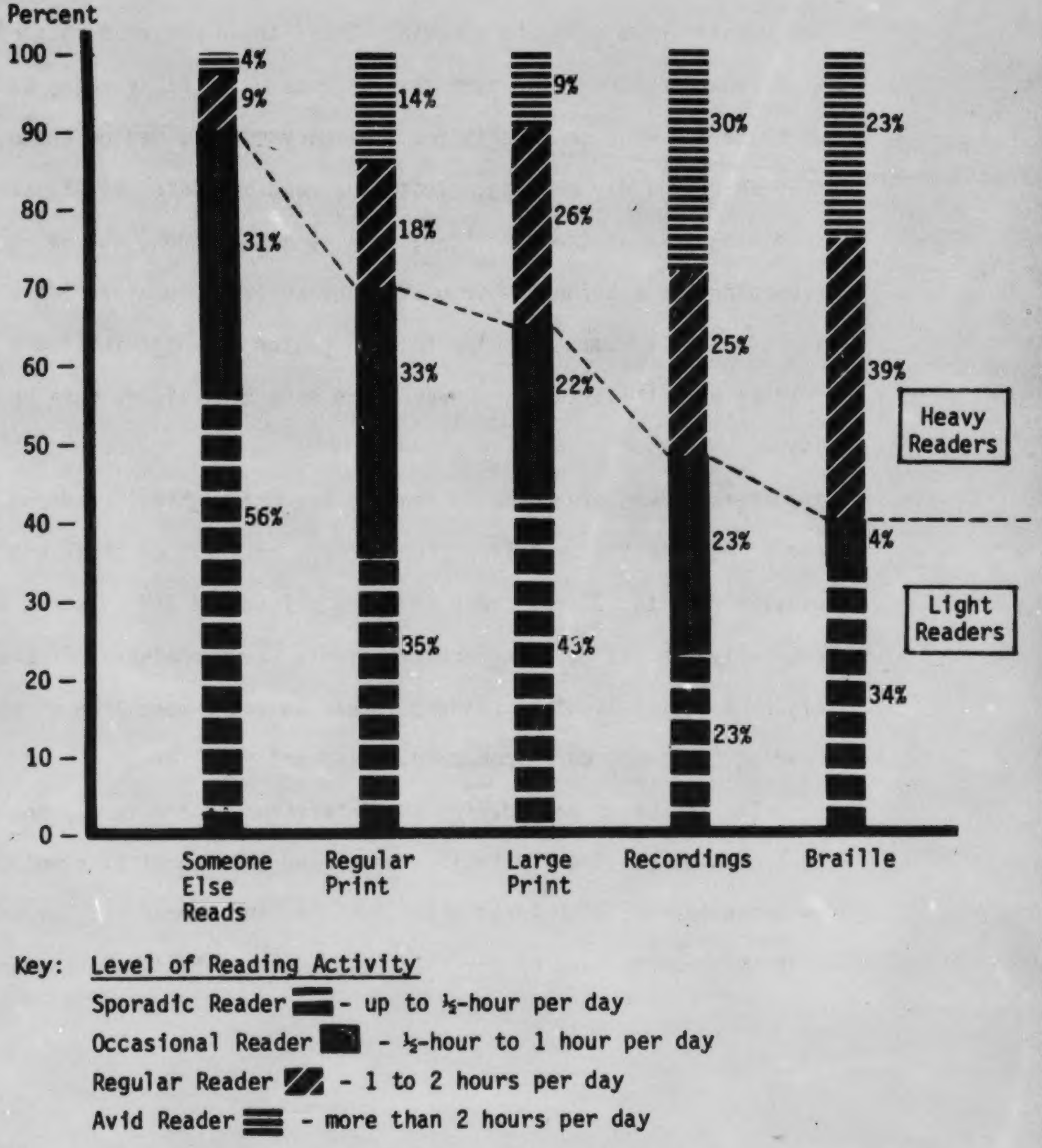
Do people who normally use any one particular medium read more than people who utilize any of the other reading media? The findings in Figure 6-10 show quite clearly that persons read primarily with recordings or braille do indeed spend more time reading than persons who usually read with other media: 55% of those who read most often with recordings read for more than an hour a day on average, and 62% of those for whom braille is their primary reading medium spend more than an hour a day reading. Those who read by listening may also do something else at the same time, such as eat or cook, and may utilize recordings as a secondary or background activity to other activities. If this is the case, it helps to account for the high incidence of reading with this medium. However, we have no decisive data on this issue.

Persons who are normally read to are the lightest readers, averaging less than a half an hour a day: only 13% of those who are usually read to, 32% of those who read print, and 35% of those who regularly read large print are relatively heavy readers. As seen in Figure 6-8, the lightest readers appear to spend more time on non-media reading (personal correspondence, bills and the likes).

The responses made during the interviews by the family members of persons with reading limitations regarding the amount of reading done by these persons with large print, braille and recordings were consistent with the reports made by the self-respondents. Family respondents,

Figure 6-10

Level of Reading Activity by Primary Way of Reading



however, tended to report much higher rates of reading to the print-limited family member than did the self-respondents, and slightly lower rates of the use of regular print. This discrepancy is not surprising if one considers that family members are probably more aware of their participation in reading with and to the print-limited person than such persons are themselves. On the other hand, though, family members may simply have wished to create a good impression on the interviewer. It would seem, according to our summary data, that the truth lies somewhere between these two extremes.

Reading Activity and Use of Optical Aids

Since so many people opt to read print despite the obstacles to doing so, we thought it would be useful to explore what reading aids were used in conjunction with print. Eighty-two percent of the persons with seeing limitations reported using prescription eye glasses or other optical aids for seeing, such as magnifiers.

Over 95% of the persons who use optical aids employ eyeglasses of one sort or another--reading glasses, bifocals, trifocals, cataract lenses, special lenses, etc.; 5% use contact lenses, perhaps in conjunction with eyeglasses. About 16% use magnifiers in addition. Telescopic aids were used by less than half a percent.

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Some of the characteristics of persons who use seeing aids for close work are given in Table 6-15. Even in the subpopulation consisting of persons with limitations in seeing print, use of reading aids increases with age: 60% of the 6-16 age group uses optical aids, compared to 88% of those 65 years and over. As might be expected, use of optical aids increases among more educated persons. Contrary to what might be expected, however, use of aids appears to decrease with the increase in household income, but this is only because so many older persons are in the lowest income groups. There is not much regional variation.

The use of magnifiers and telescopic aids appears to enable people with seeing problems who otherwise could not read print to use this medium, and to enable others to read a bit more. But the effect is not very marked since the same proportion of light readers use magnifiers and telescopic aids as that of heavy readers: 15% of the former group compared to 18% of the latter group use magnifiers or telescopic aids for more than one hour a day. Examined another way, about the same proportion of persons who use magnifiers are light readers as those who do not use them: 35% of those who use magnifiers are light readers, compared to 39% of those who have seeing problems but do not use magnifiers; and 36% of those who use magnifiers are heavy readers compared to 31% of those who do not use these aids.

Table 6-15

Use of Eye Glasses or Other Vision Aids Among Persons With Visual Limitations in Reading

Characteristic	Weighted Sample Size	Use of Glasses or Vision Aids
		-- Percent --
Total	(5852)	82
Age		
6-16 Years	(411)	60
17-44 Years	(788)	69
45-64 Years	(1595)	84
65 Years and Over	(3058)	88
Sex		
Male	(2129)	77
Female	(3663)	86
Race		
White	(4702)	83
Non-White	(978)	81
Education		
Elementary	(2233)	81
High School	(2049)	84
College	(1128)	86
Income		
Less than $5,000	(2513)	85
$5,000 - $9,999	(1244)	83
$10,000 - $14,999	(538)	79
$15,000 - $19,999	(374)	75
$20,000 and Over	(295)	74
Region		
North East	(1048)	84
South	(2307)	81
North Central	(1664)	84
West	(817)	80
Place of Residence		
Metropolitan	(3871)	83
Non-Metropolitan	(1970)	81

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Level of Reading Activity and Participation in Other Activities

One of the hypotheses proposed in Chapter 5 was that the level of reading activity was associated with the general level of participation and activity. We sought to test this hypothesis by comparing the amount of time spent reading with the number of activities commonly performed by all of the respondents in the past month (cooking, going for a walk, shopping, attending meetings, going to church, reading, playing board games, going out to dinner or a movie). The results show that regular reading is indeed induced and sustained by frequent and active experiences. For the sporadic readers, the median number of activities performed was 3.83 out of 8 or 48%; for the occasional readers the median was 4.49 out of 8 or 56%; for the regular readers the median was 5.15 out of 8 or 64%; and, curiously, for the avid readers the median was only 4.31 or 54%.

Many of the heaviest readers appear to be among the less active persons, resulting in a reversal of the trend observed of increasing reading activity with increasing participation in activities generally. This bears out the second hypothesis proposed in Chapter 5, that relative (though not extreme) inactivity induces a reliance on indirect forms of communication, from which people may derive a vicarious pleasure they could not derive directly--either because they are no longer physically capable of doing the things they like reading about, or of doing them with as much satisfaction. Among the most inactive persons--individuals who did two or less of the common activities in the past month--56% were sporadic readers and only 21% were regular or avid readers.

We have previously shown that enjoyment of the eight activities examined is highly correlated with the performance of them. Hence, we conclude that the regular readers seem to take more pleasure in their lives than the others. (This, of course, presupposes that the respondents' participation in activities is a sign of contentment or satisfaction with their lives.) The median number of activities that sporadic readers said they "enjoy a lot" is 3.06, the median for occasional readers is 3.32, the median for regular readers is 3.73 and the median for avid readers is 3.21. The drop in the number of activities performed from regular to avid readers once again leads us to believe that many of the most avid readers are persons who read as a means of escape and vicarious pleasure.

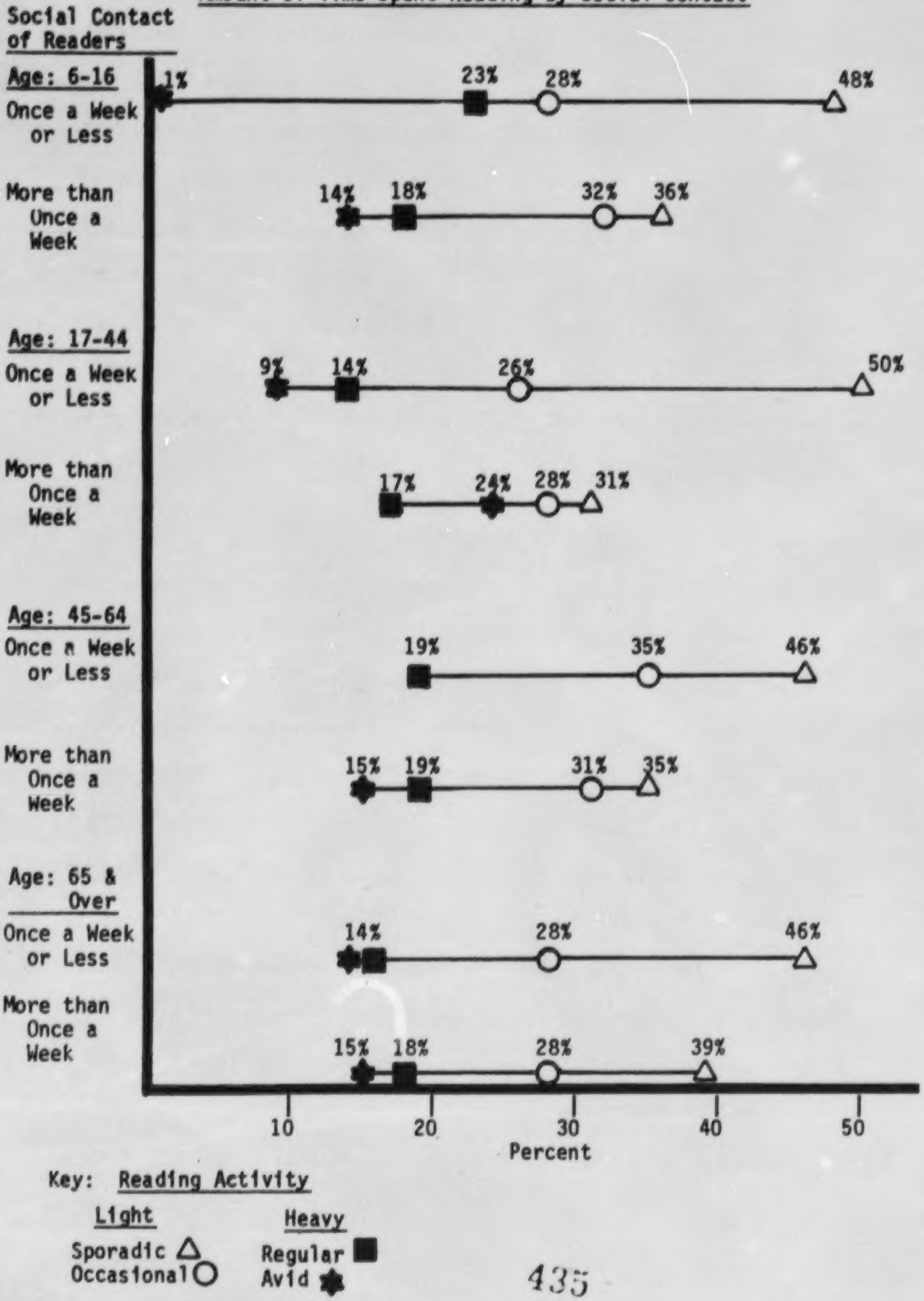
Reading Activity and Social Contact

Still another hypothesis suggested in Chapter 5 is that reading is a concomitant of social contact. We have already seen that discussing books and materials with others seems to be positively associated with reading activity. If this hypothesis is correct, we should see persons who have relatively greater amounts of social contact spending more time reading than those who are more socially isolated. Figure 6-11 shows this to be the case for all age groups. On average, both male and female respondents who visit or have social contact with people from outside their homes more than once a week read about 10% more than respondents who have social contact once a week or less. Thus, it appears that our results are consistent with research by Hajda (1967) on the general population.

Hadja proposed that reading requires an active participation and

Figure 6-11

Amount of Time Spent Reading by Social Contact



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mental effort which is emotionally more difficult for a solitary, lonely individual than it is for an outgoing, socially integrated person. Isolation, he suggested, could lead to a total abandonment of books. The motivation to read, on the contrary, is induced and sustained by frequent and active encounters with persons outside one's immediate family, with whom one may share reading experiences.

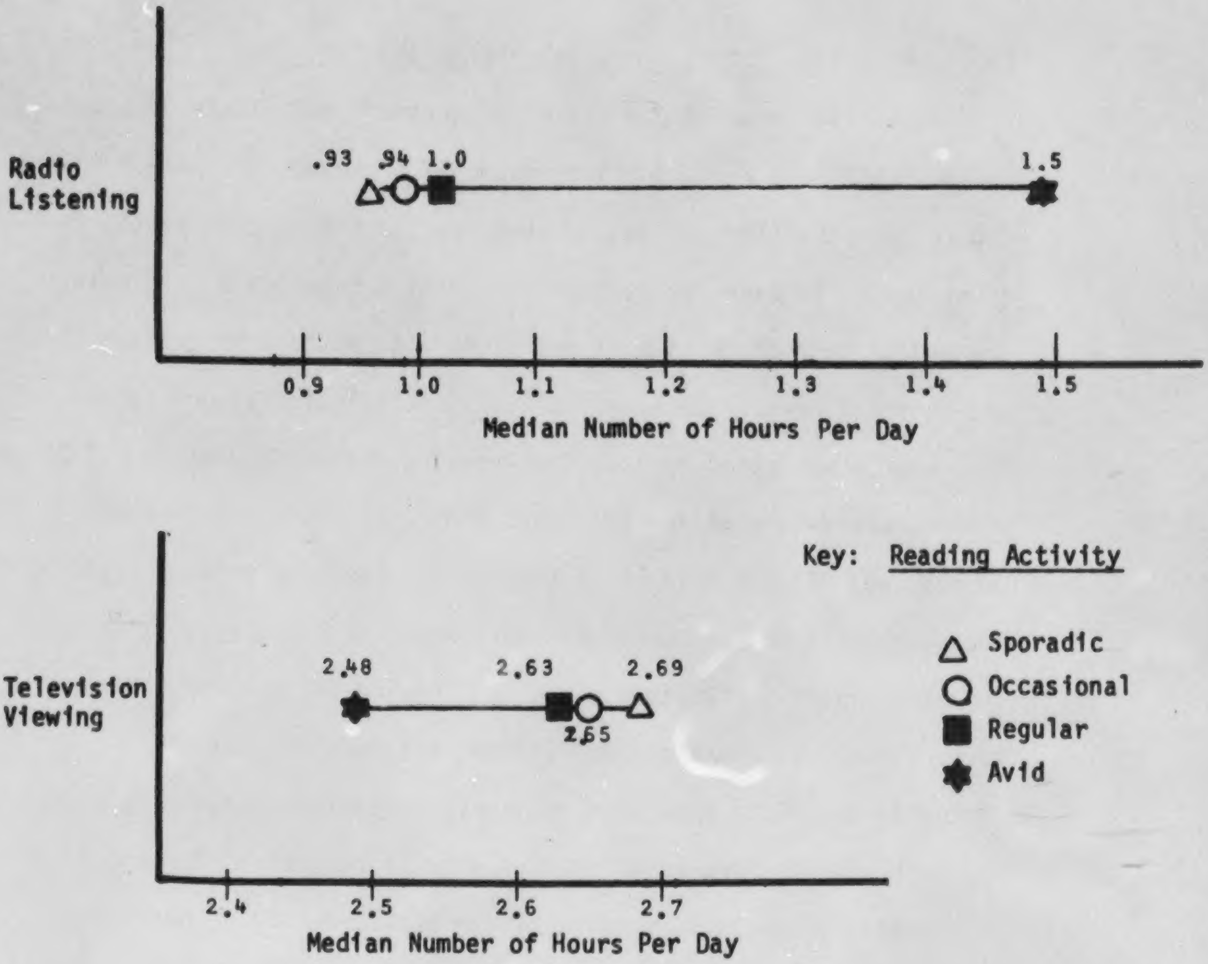
Level of Reading Activity and Television and Radio Use

We earlier posed the question of whether individuals were using media like TV and radio for informational purposes, for entertainment and to pass the time, in lieu of reading. In the general public this seems to be the case for many people; this phenomenon of replacing one medium by another is most prevalent with respect to getting local and national news. The effect of this substitution is, of course, that people are spending less time reading than they used to. Similar effects are suggested for the respondents, although they are not pronounced. Figure 6-12 shows that as the level of reading activity increases, the median number of hours spent watching television declines slightly. Radio use and reading, on the contrary, appear to be almost complementary activities; the heaviest readers listen to the radio more than do lighter readers. These same patterns are seen when the amount of reading done is controlled for age.

Contrary to the stereotype of the bookworm, the respondents who are heavy readers are not solitary persons. Rather, they seem to integrate reading into their other leisure activities, something which occasional readers and sporadic readers appear to do less. The

Figure 6-12

Television and Radio Use by Reading Activity Level



fact is that the people who are most actively engaged in a variety of leisure activities are also among the heaviest readers: avid readers read more of all kinds of print alternatives, and they watch nearly as much TV and listen to the radio as much as non-readers. However, in general, non-readers do watch significantly more television than readers.

F. WHO READS?

U.S. POPULATION AT LARGE

Every major study of reading habits (e.g., Berelson, 1949; Ennis, 1965; Lyman, 1976; Gallup, 1975, 1978; Yankelovich, 1978) indicates that reading is associated positively with the enabling variables of formal education, income and socio-economic status. The 1978 Gallup poll of 1515 American adults showed that college-educated persons between the ages of 18 and 34 were the heaviest readers. The Gallup 1975 study found that among persons with less than a high school degree, 66% read less than six books in the past year compared to only 28% for college graduates.

The predisposing factors of age and sex are also significant. Women and younger persons are likely to read more books than men and older persons. For example, the 1971 Gallup study found that 37% of the persons between 21-29 read books in the previous month; 28% of the persons between 30-49 read books in the previous month; while in the age group 50 years and over only 16% read books in the previous month.

The 1978 Yankelovich study indicates that women are slightly more likely to be book readers (60%) than men (49%), and that men are more likely to read magazines and/or newspapers exclusively (44%) than are women (34%). This corresponds to the finding, noted above, that women tend to read more for pleasure, and that men tend to read more for information. Non-readers are not concentrated into specific age groups, but persons over 50 years old tend to read fewer books than they do magazines and newspapers. To illustrate, 60% of the persons between the ages 21-29 were book readers, 35% were non-book readers, and 5% were non-readers. But only 31% of the group over age 65 were book readers, while 59% were non-book readers, and 10% were non-readers.*

Surprisingly, survey data from multiple sources (Stevenson, 1977; Larkin, Grotta and Stout, 1977; Curley, 1979) indicate that persons in the 18-34 age bracket are much less "newspaper-oriented" than their elders. Two contrasting explanations for this phenomenon can be suggested: one, the main historical events that affected these young adults were the Vietnam War and Watergate and, as a result of the misleading coverage of these events, they may now be skeptical of all political journalism;** and two, young persons have grown up primarily on a diet of TV news and are comfortable with it. It appears also, that older persons switch readership from books to shorter pieces appearing in newspapers and magazines, to compensate for their waning attention spans, dexterity and endurance. But, whatever the reasons, the importance of newspapers as a source of pleasure and relaxation for this older age group cannot be dismissed. Newspapers are also the vehicle by which many persons keep in touch with their communities. A survey of radio stations that provide reading programs for persons with physical limitations, most of whom are above age 65, found that local newspapers were much preferred by these audiences over any other materials (Berkowitz, 1979).

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*A 1973 study conducted by Lyman shows the same demographic patterns as those given here. She found that more than twice as many women do some form of reading as men. Reading was highest during the school years, decreased slightly in the 25-34 year old group, increased again in the 35-44 year old group, and then gradually fell among persons in the progressively older ages. The amount of reading done bears a direct correlation to the amount of schooling the person had; that is, the higher the reader's educational attainments, the more he/she reads.

**Perhaps even more important than the coverage of these events were the events themselves, which seem to have engendered a widespread distrust in government, and a concomitant lethargy with respect to political events generally.

Although more affluent managers and professionals read more, on the average, than less well-paid blue collar workers, education is a stronger predictor of book-reading than income or occupation. The findings also suggest that whites (who generally have higher incomes and have received more schooling) are generally more avid readers than non-whites.* Only minor variations by geographic region or type of community (i.e., urban, suburban, rural) exist, and persons with children are more avid book readers than those without (see Yankelovich, 1978).

PERSONS WITH PRINT LIMITATIONS

Some of the factors that are strongly associated with reading in the general population are also fundamental predictors of reading among persons with print limitations, others are not. The predisposing factors of age and sex, for example, are only weak guides to the level of reading activity among persons with print limitations. In assessing the question of who reads, we plan to consider the variables of type and severity of reading and compounding limitations, and then move to the social structure and community factors.

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*One factor which would seem to bear on the relative amounts of reading done by whites and non-whites is the availability of reading materials. For example, now that Cosmopolitan magazine is published in Spanish as well as English, it is available to the Hispanic community also, and presumably certain segments of this population are reading more than they used to as a result.

FACTORS ASSOCIATED WITH LEVEL OF READING ACTIVITY

Reading Limitations

Type of Reading Limitation--Do the respondents who cannot read or use regular print spend more or less time reading than persons who have less severe limitations? Unfortunately, the data do not show a consistent pattern for the various limitations in seeing, holding, turning, sitting-up, weakness and learning according to severity. For example, about the same proportions of persons who are unable to see print are sporadic, occasional, regular and avid readers as are persons who have difficulties in seeing. But persons who are unable to hold a book or turn pages, or who cannot sit up to read or cannot read for more than a few minutes at a time appear, perhaps surprisingly, to read slightly more heavily than do persons who only have difficulties in these functions (Figure 6-13). Perhaps it is because, as we have shown, persons who are less severely impaired participate more heavily in alternate activities to reading.

Severity of Reading Limitations-- In addition to the intuitively obvious findings which emerge when the levels of reading activity are examined with respect to the severity of all the reading limitations affecting the individual--namely that the amount of reading an individual does generally decreases as the number of limitations increases--we also found, curiously enough, that persons with "severe" limitations are the heaviest readers, reading more than both persons with "very severe" limitations and those with only "moderate" or "minor" limitations (see Figure 6-14).

Figure 6-13

Amount of Time Spent Reading by Age, Type and Severity of Limitation

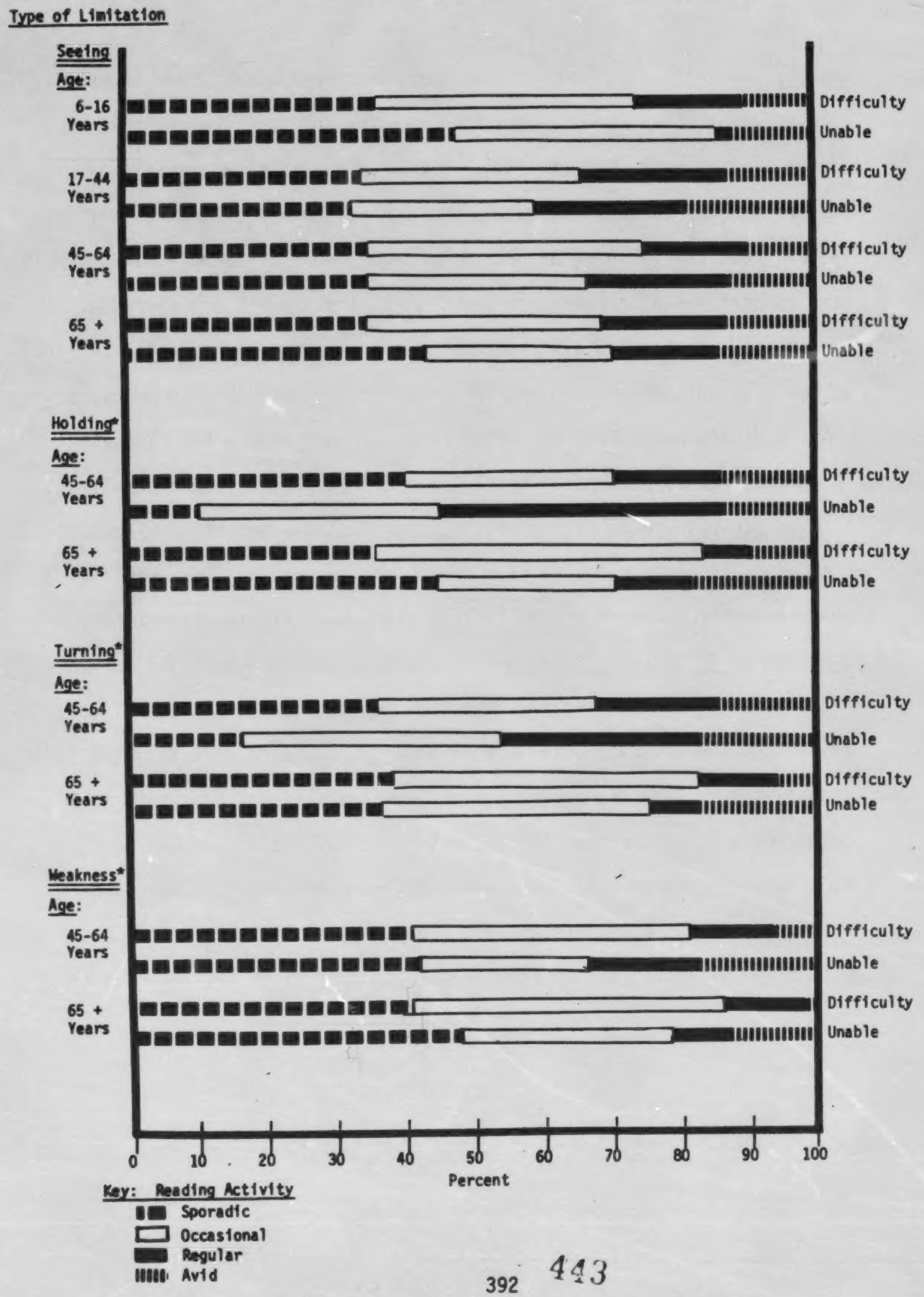
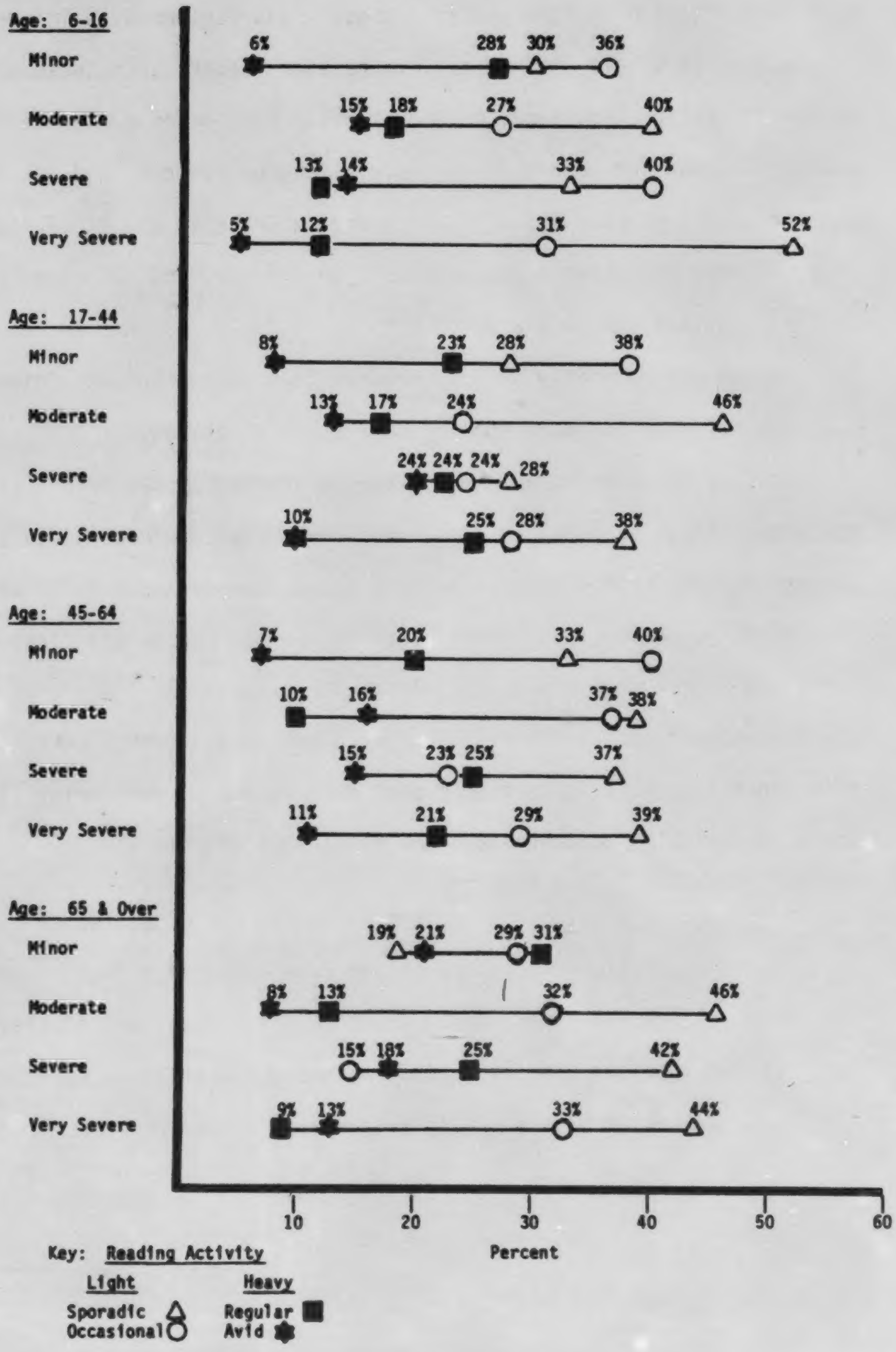


Figure 6-14

Level of Reading Activity by Severity of Reading Limitation



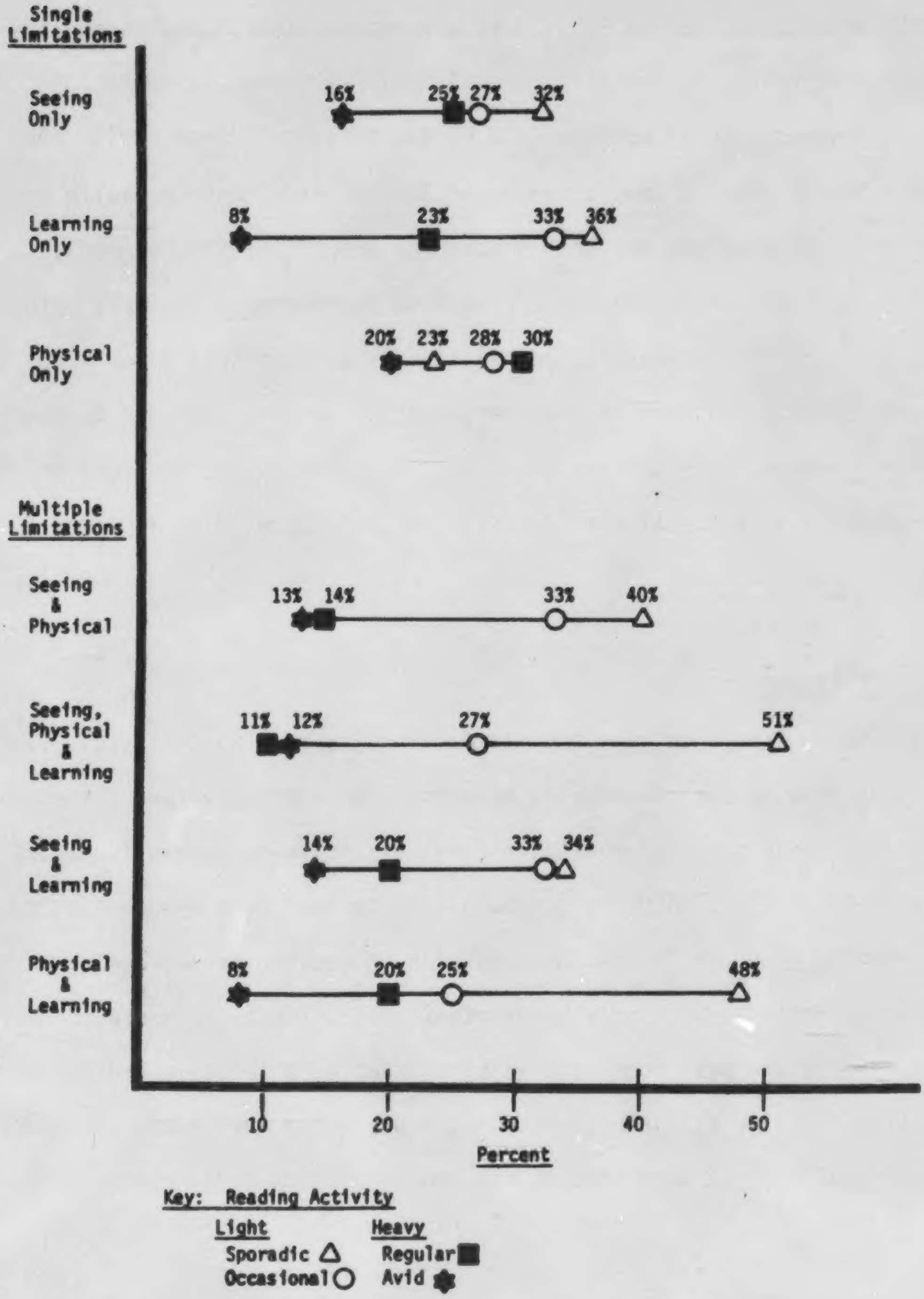
Persons who have "severe" limitations (a single inability) are generally more active readers than persons who have "very severe" limitations (one or more inabilities plus other difficulties). And persons with "minor" reading limitations (a single difficulty) are heavier readers than those with "moderate" limitations (multiple difficulties). For example, in the "minor" group, 39% read for more than one hour a day, on average, and 35% read for between a half an hour and one hour a day, whereas in the "moderate" group, only 27% read more than one hour a day, on average, and 30% read between half an hour and one hour a day. But unexpectedly, persons who have "severe" limitations are slightly heavier readers than those who have "minor" limitations: 43% read for more than an hour a day on average.

Most of the persons in the "severe" group cannot see print, and a large portion of these persons, as discussed previously, use recordings as their primary way of reading. These persons appear to have more fully committed themselves to reading with print alternatives than those with lesser limitations who are often still struggling with print. The "very severe" group, however, appears to have a set of reading limitations which makes reading more trouble than it is worth, in part because the current print alternatives do not fully accommodate their multiple limitations.

Number of Reading Limitations--Multiple limitations of different types appear to be associated with reduced amounts of time spent on reading. This is seen quite clearly in Figure 6-15, where reading levels are displayed for each reading typology. Multiple limitations are seen to be associated with the higher percentages of sporadic reading.

Figure 6-15

Time Spent Reading by Reading Limitation Typology



Compounding Limitations in Hearing, Health and Mobility

The effects of restricted hearing, mobility and general health on the level of reading activity are mixed. The clearest and most regular relationship obtains between an individual's reported general health and his/her reading activity: as reported general health improves, reading activity increases. To illustrate, 36% of the persons in good health read for more than an hour a day, compared to 32% of those in fair health and 21% of those in poor health, within each age group (see Figure 6-16).

Persons confined to the house read less than persons who have both less severe and more severe mobility restrictions: perhaps this group keeps busy with other activities in the home, whereas persons confined to their beds have fewer options to pass the time. And finally, persons who are hard of hearing are slightly lighter readers than persons with no auditory limitations.

BELIEFS/ATTITUDES

Attitudinal orientations tend to distinguish reading activity. Table 6-16 shows that persons expressing more positive attitudes toward their life as a whole, their personal health, themselves and their accomplishments, and toward their facility in getting around tend to read more frequently, to enjoy reading more and to read more heavily. A greater percentage of persons expressing positive attitudes toward their disabilities also reported having read in the past month and enjoying reading a lot than those expressing negative attitudes. However, among those that read, attitudes toward disability are unrelated to the amount of time spent reading.

Figure 6-16

Relationship Between Health and Reading Activity

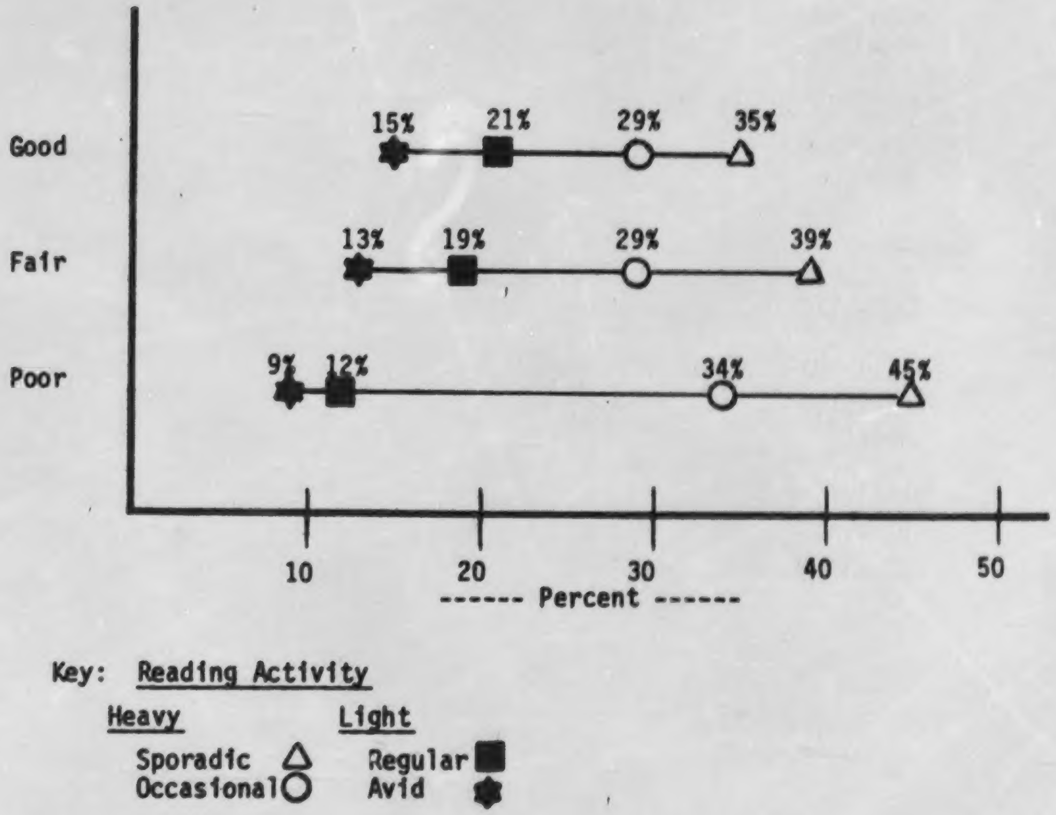


Table 6-16

Reading Characteristics by Attitudes Toward Concerns

ATTITUDES TOWARD:	Weighted Sample Size	Read Last Month	Enjoy Reading a Lot	Read More Than 7 Hours Per Week
		Percent		
Life as a Whole				
Positive	(1426)	83	59	20
Negative	(449)	58	40	10
Personal Health				
Positive	(403)	75	55	21
Negative	(646)	73	47	11
Disability or Appearance				
Positive	(191)	85	72	14
Negative	(919)	69	53	14
Self				
Positive	(534)	82	55	17
Negative	(550)	66	44	18
Responsibilities/Accomplishments				
Positive	(538)	84	66	23
Negative	(297)	65	47	12
Mobility or Going Outside				
Positive	(492)	81	57	19
Negative	(569)	71	53	11

SOCIAL AND DEMOGRAPHIC FACTORS

Predisposing Factors

Age/Sex/Race--As we show in Figure 6-17, there is not much variation in the amount of reading done by persons in different age groups, or by males as opposed to females. Whites, however, spend more time reading than non-whites.

Enabling Factors

Education--The level of eductional attainment is one of the most important predictors of the amount of time spent reading. Figure 6-18 shows, for example, that among persons 17-44 years old the proportion of sporadic readers drops from 59% for persons with an elementary school education, to 37% for those who had attended high school, to 25% for those who had attended college; over 95% of the regular and avid readers had at least a high school education. The same pattern holds among persons 45-64 years old, and 65 years and over.

Sex (controlling for education and age)--The amount of reading done by males versus females follows no consistent pattern when the data are controlled for differences in age and degree of educational attainment. (See Table 6-17.) This was also our finding when the data are controlled for media type. For some groups, such as persons with an elementary school

Figure 6-17

Level of Reading Activity By Age and Sex

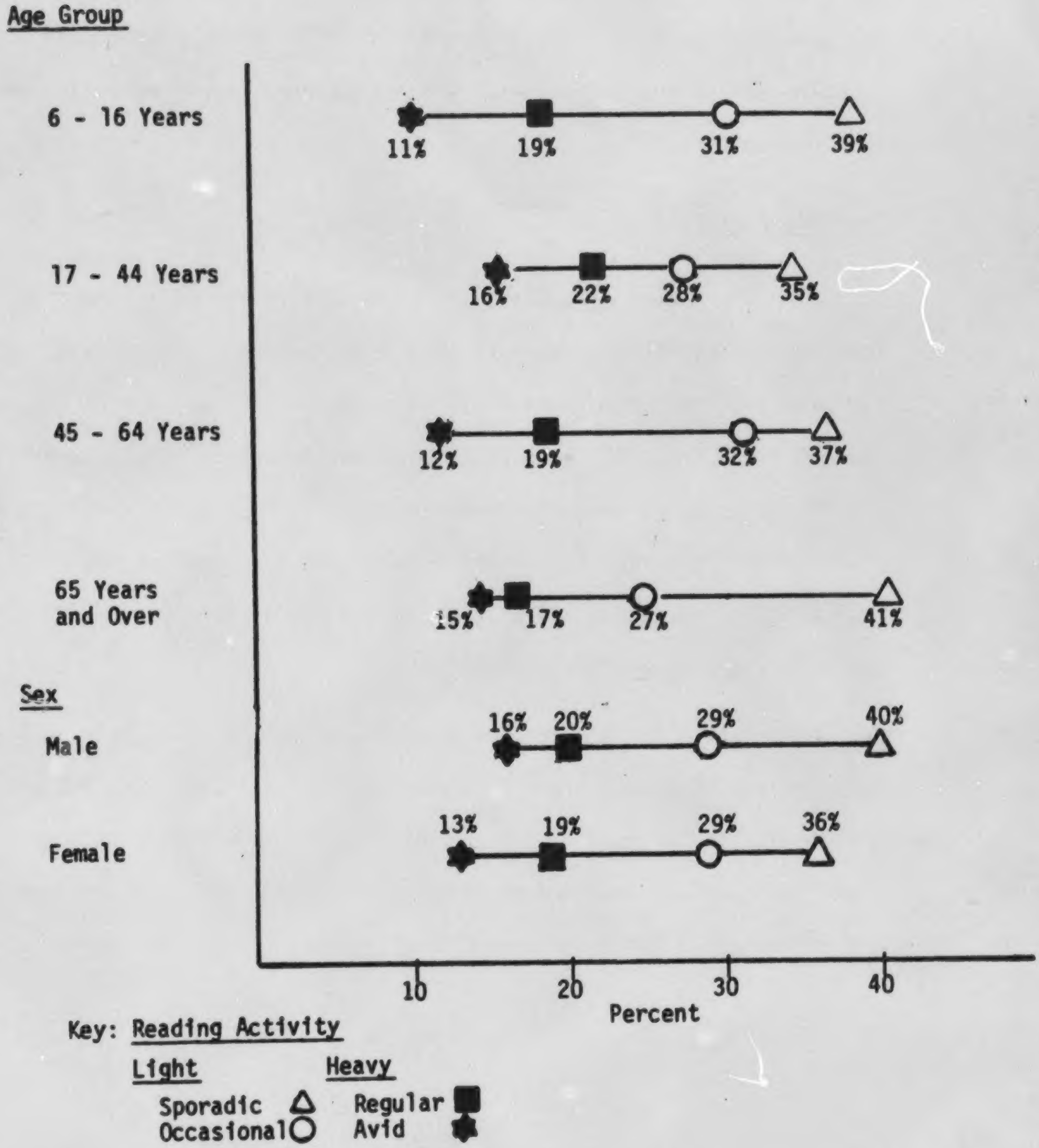


Figure 6-18

Reading Activity by Highest Level of School Attended Within Age Groups

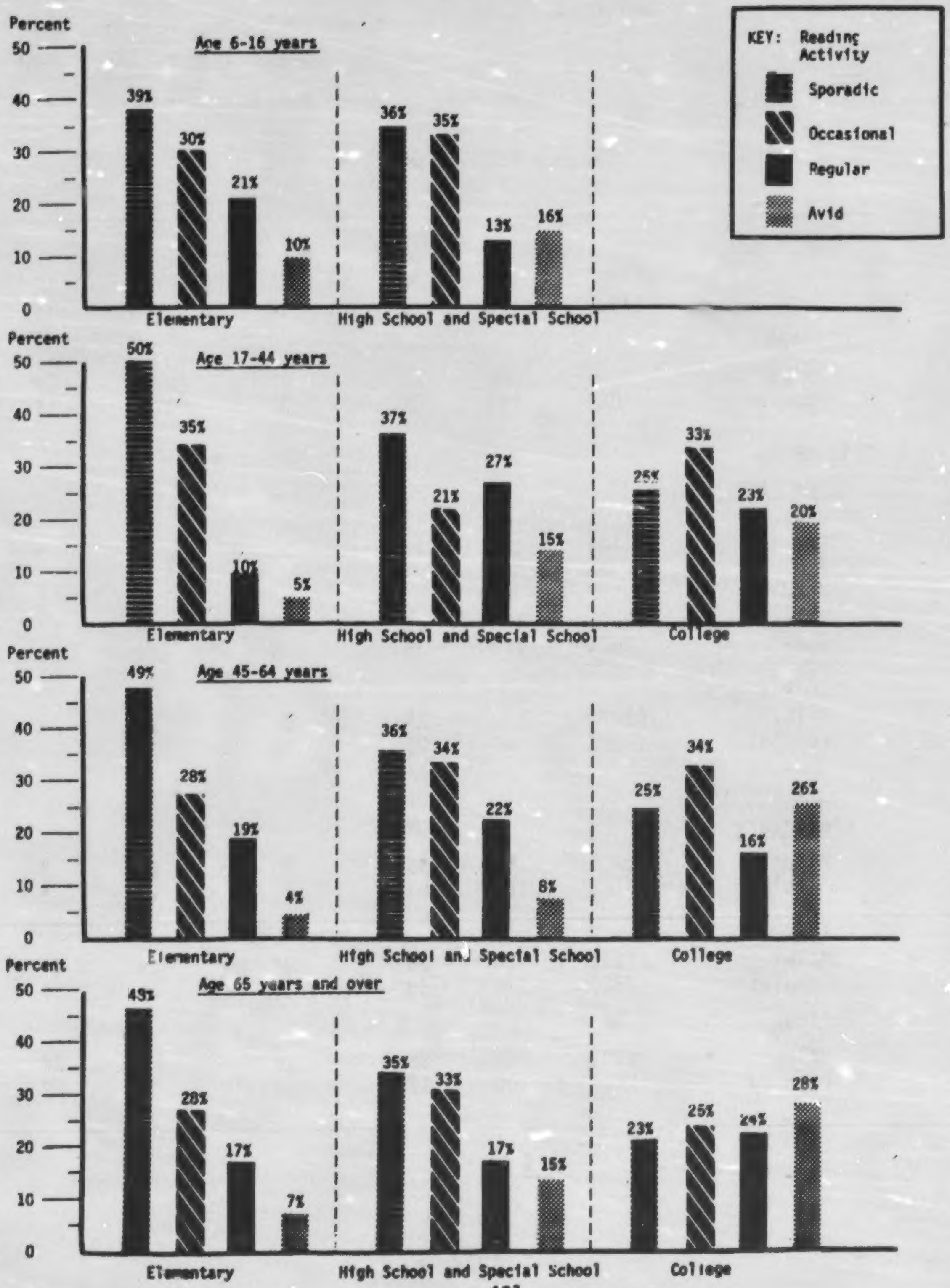


Table 6-17

Level of Reading Activity by Age, Education and Sex

	Weighted Sample Size	Total	--- Level of Reading Activity ---			
			Sporadic	Occasional	Regular	Avid
		---------------- Percent --------------				
Age: 6-16						
Elementary						
Males	(212)	100	41	30	22	7
Females	(129)	100	33	32	20	15
Age: 17-44						
High School						
Males	(143)	100	30	25	28	17
Females	(133)	100	41	18	26	14
College						
Males	(101)	100	17	29	25	29
Females	(108)	100	29	39	22	11
Age: 45-64						
Elementary						
Males	(92)	100	59	16	19	6
Females	(119)	100	41	37	19	3
High School						
Males	(125)	100	29	45	14	12
Females	(262)	100	39	30	26	6
College						
Males	(107)	100	24	36	17	24
Females	(121)	100	25	32	15	28
Age: 65 and Over						
Elementary						
Males	(125)	100	49	30	15	7
Females	(374)	100	52	27	16	6
High School						
Males	(116)	100	25	24	24	27
Females	(332)	100	38	36	15	11
College						
Males	(113)	100	35	20	20	24
Females	(221)	100	17	28	26	29

education between the ages of 6-16, and 45-64 years, females are heavier readers. For other groups, males seem to be heavier readers (persons 17-44 years with a college education). For still other groups, no differences are observed.

Income--It is quite unclear what effect, if any, household income has on the amount of time spent reading for persons between 6 and 44 years old. For the older groups--45-64 years and 65 and over--persons residing in more affluent households tend to be heavier readers, but the association is neither regular nor pronounced.

After controlling for differences in education, there is no clear association between income and time spent reading: well-educated persons with low household incomes seem to read just as much as those with high household incomes.* This is shown in Table 6-18.

Social Role/Stage in Life Cycle--One's work-related needs, avocational needs and social pursuits are all strong inducements to read. In the general population, the most avid readers appear to be persons who lead

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*Persons with higher educational levels and incomes, however, appear to become engaged in a more diverse group of activities, or to do more hopping between activities than they do any one activity intensively.

Table 6-18

Level of Reading Activity By Household Income Within Education Levels

	Weighted Sample Size	Total	Sporadic	Occasional	Regular	Avid
		-- Level of Reading Activity --				
Elementary Education (0-8 Years)		Percent				
Income						
Less Than $5,000	(520)	100	48	29	17	6
$5,000 - $9,999	(196)	100	57	18	15	10
$10,000 - $14,999	(126)	100	38	32	23	7
$15,000 - & Over	(124)	100	40	33	19	6
High School Education (9-12 Years)						
Income						
Less Than $5,000	(448)	100	33	30	25	11
$5,000 - $9,999	(275)	100	32	31	20	18
$10,000 - $14,999	(123)	100	47	24	17	13
$15,000 - & Over	(147)	100	41	29	16	12
College Education (13 - Plus Years)						
Income						
Less Than $5,000	(194)	100	25	34	17	25
$5,000 - $9,999	(186)	100	26	34	21	19
$10,000 - $14,999	(135)	100	19	25	31	25
$15,000 - & Over	(195)	100	25	32	21	22

active lives (Yankelovich, 1978). Among persons with print limitations, however, we saw no direct correlation between the number of hours worked or income and a person's level of participation in activities (see Chapter 5). The participation rates vary from individual to individual, irrespective of the leisure time one has to devote to activities and the relative economic freedom of the individual. Some people participate in a wide array of activities and do them all intensively, while others are more restricted both in terms of their choice of activities and their ability to become actively engaged in many things at once. For the first type of person, it appears that the more they do, the more they want to do, and the more dissatisfied they are with the difficulties they face in what they do. (We discuss this phenomenon, for example, in relation to the respondents' use of the NLS Talking Book program in Chapter 8.) Myersohn has coined the phrase "the more the more" to describe this type of behavior.

With respect to reading, the effect of an individual's usual social roles or place in the life cycle on the amount of time spent reading is not pronounced (see Table 6-19). Among persons 17-44 years, nearly half of the persons going to school are regular or avid readers, compared to 30% of the respondents in this age group as a whole. In the 45-64 age group, persons taking care of homes are much heavier readers than those who are working, or those who are retired or not working for reasons of health. In the 65 years and over group, no significant differences are seen in the amount of reading done. But overall, the data suggest that persons in the most active social roles do roughly the same

Table 6-19

Reading Activity by Usual Social Role Within Age Groups

Social Role	Weighted Sample Size	Total	-- Level of Reading Activity -- Sporadic	Occasional	Regular	Avid
		-------------	Percent	-------------		
Age: 6-16						
Going to School	(496)	100	40	31	19	11
Other	(30)	100	**	**	**	**
Age: 17-44						
Going to School	(177)	100	36	16	21	28
Taking Care of Home	(59)	100	43	29	28	*
Working	(197)	100	36	39	19	5
Not Working	(99)	100	19	32	30	19
Other	(62)	100	**	**	**	**
Age: 45-64						
Taking Care of Home	(116)	100	24	33	27	16
Working	(171)	100	35	44	6	15
Retired	(147)	100	45	20	25	10
Not Working for Other Reason	(365)	100	36	33	21	11
Other	(23)	100	**	**	**	**
Age: 65 & Over						
Taking Care of Home	(94)	100	44	29	24	3
Retired	(1070)	100	42	27	17	14
Not Working for Other Reason	(147)	100	39	33	11	17
Other	(39)	100	**	**	**	**

* Less than 0.5%.
** Data insufficient for reliable estimates.

amount of reading as persons who have less active life styles. The amount of reading done as the result of an active, information-oriented life style seems to be balanced by that done to obtain vicarious pleasure.

Community Factors

Region/Place of Residence--There are two findings of significance for the National Library Service which emerge from an examination of the geographical variations in the amount of time spent reading, which are given in Figure 6-19 and Table 6-20. They are:

1) Persons living in more urbanized areas are generally more active readers than persons living in suburban and rural areas. Except in the mid-western states, the proportion of persons reading more than an hour a day within each region is over twenty percentage points higher in the urban areas.
2) Persons in the western states are among the heaviest readers within each age group.* Otherwise there is not a great deal of difference between regions when age is controlled, though the South and North Central consistently fall toward the end of lightest readership.

The first trend may be related both to the generally higher levels of awareness found in urban areas (this phenomenon has been spoken of at greater length in a prior section), and the greater accessibility of such facilities as book stores and newsstands, post offices, health care workers and social service agencies, and public transportation.

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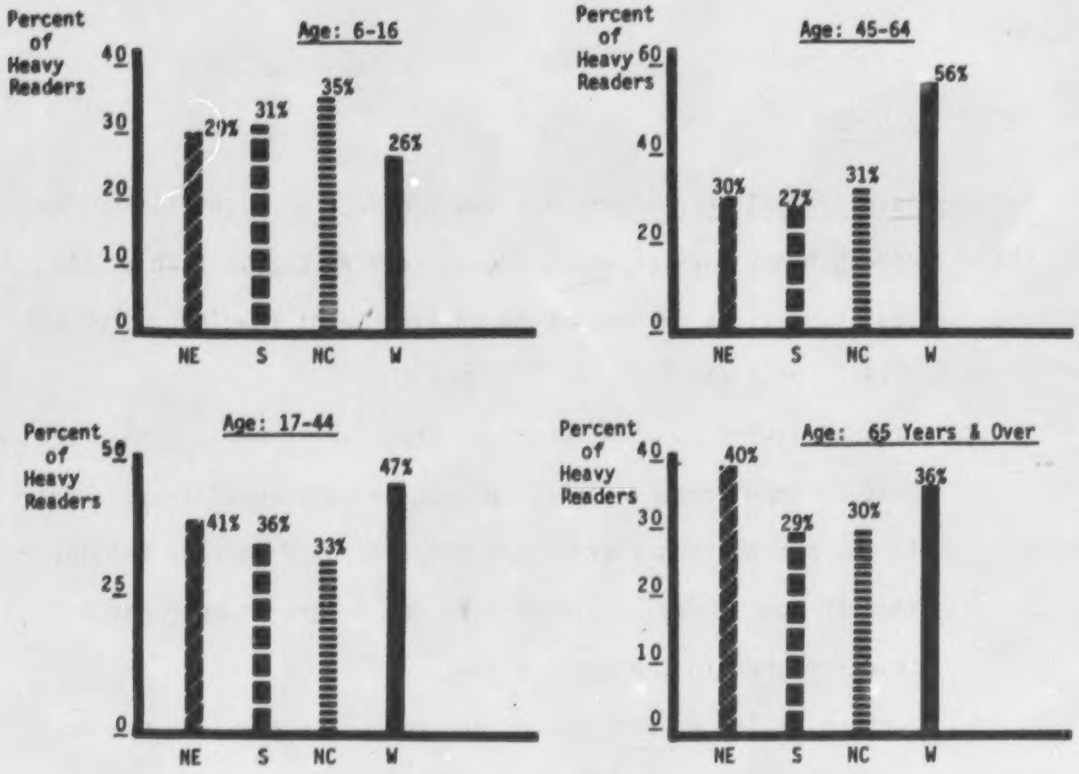
*The tendency to read more in the West may be related to a distribution of slightly younger and better-educated persons in western states.

Figure 6-19

Reading Activity by Region and Place of Residence

Region



Key:
▨ NE = North East
☰ S = South
☰ NC = North Central
■ W = West

Heavy Readers = Those that read for more than an hour a day (excludes non-readers).

Place of Residence

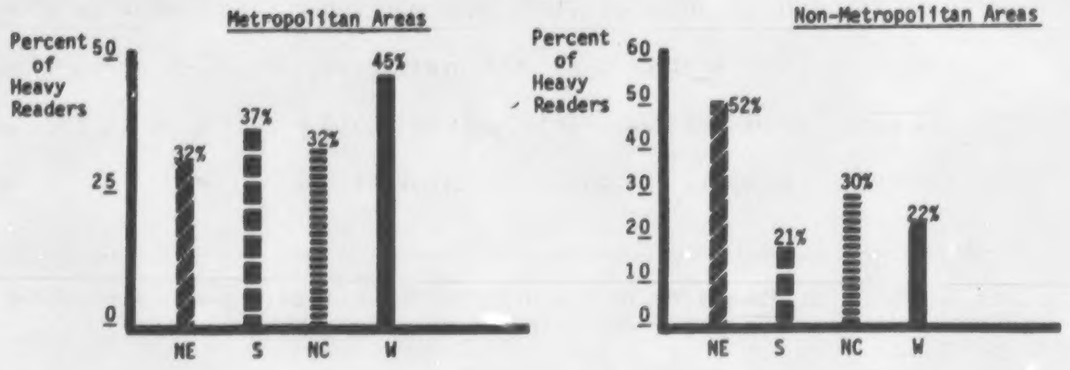


Table 6-20

Level of Reading Activity by (a) Age and Region and (b) Place of Residence and Region

Census Region	Weighted Sample Size	Total	--- Level of Reading Activity --- Sporadic	Occasional	Regular	Avid ---
		----------------	---------------- Percent	--------------		
Age: 6-16 Years						
North East	(116)	100	40	32	16	13
South	(179)	100	34	36	20	11
North Central	(151)	100	42	24	24	11
West	(69)	100	38	36	17	9
17-44						
North East	(130)	100	42	17	23	18
South	(198)	100	34	30	23	13
North Central	(148)	100	32	35	20	13
West	(110)	100	24	29	23	24
45-64						
North East	(154)	100	38	32	22	8
South	(374)	100	41	32	18	9
North Central	(236)	100	33	35	16	15
West	(86)	100	24	21	28	28
65 and Over						
North East	(220)	100	41	20	24	16
South	(569)	100	45	26	17	12
North Central	(353)	100	44	27	18	12
West	(247)	100	24	40	13	23
Place of Residence/Degree of Urbanization						
Metropolitan						
North East	(516)	100	43	25	18	14
South	(724)	100	38	25	23	14
North Central	(555)	100	38	30	17	15
West	(409)	100	23	32	20	25
Non-Metropolitan						
North East	(105)	100	28	21	40	12
South	(597)	100	44	35	13	8
North Central	(332)	100	40	30	21	9
West	(104)	100	39	40	11	11

The data suggest, then, those areas where receptivity to the NLS program may be expected to be highest (the western states) and those areas where special efforts may be necessary to expand subscription (the rural and suburban areas).

G. WHERE DOES ONE GET READING MATERIALS?

Although we did not explore sources used by the respondents to obtain print materials, we have no reason to believe that they are different from those used in the general population. For the general population, there are two basic ways to obtain reading materials outside one's existing stock of personal or family possessions: borrowing and purchasing.* Borrowing relates to the organizational variables, to community resource variables and to social networks. Purchasing relates primarily to community variables, personal economic factors and belief systems. The most essential factor in the purchasing of reading materials is a knowledge of what is available.

Where do people get print alternatives? Over one hundred organizations make available braille or recordings, freely or at a very minimal expense to the print-limited readers. For example, Recording for the Blind, as previously mentioned, will record (without charge) any print item for which two copies are supplied. Table 6-21 gives a list of some of these organizations and others are reported in the National Library Service reference circulars, Braille Instruction and Writing Equipment (1978); Subject Guide to Spoken Word Recordings (1978) and Magazines in Special Media (1978).

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*Yankelovich (1978) found that although two out of three book readers in the general population purchased books for their own reading in the last six months, nearly all book readers acquire books by library borrowing, trading with friends, and as gifts. It appears that half of the adult U.S. population has visited a bookstore in the last six months. This figure includes non-book readers and non-readers who visited to browse and to buy gifts: 21% of the non-readers and 22% of the non-book readers bought books for others while browsing, compared to 79% of the book readers.

These results are consistent with findings by Gallup in 1975. Adults who had read books in the previous year used the following sources: a) Borrowed from: Friend-37%; Library-27%; b) Purchased from: Bookstore-36%; Other type of store-15%; Book club-15%; Newsstand-8%; c) Other, don't know-16%. The expense of purchasing reading materials does not seem to be a major deterrent for the population as a whole. As shown by Yankelovich (1978), the typical book reader spent $18 on books in the past six months. (This compares with an expenditure of about $2 per capita in U.S. libraries in 1974 (Statistical Abstract of the United States, 1978).)

Table 6-21

Selected Sources of Print Alternatives

1. American Baptist Churches of the U.S.A.
2. American Bible Society
3. American Brotherhood for the Blind
4. American Chemical Society
5. American Council for the Blind
6. American Foundation for the Blind
7. American National Red Cross
8. American Printing House for the Blind
9. Association for the Education of the Visually Handicapped
10. Atonement Lutheran Church
11. Black Box
12. Blinded Veterans Association
13. Board of Missions
14. Braille Circulating Library
15. Braille Evangel, Inc.
16. Braille Institute of America
17. Braille Sports Foundation
18. Canadian National Institute for the Blind
19. Catholic Guild for the Blind
20. CCH Audilex
21. Center for Independent Living
22. Choice Magazine Listening
23. Christian Education for the Blind
24. Christian Fellowship for the Blind
25. Christian Mission for the Sightless
26. Christian Record Braille Foundation
27. Christian Science Publishing Society
28. Church of Jesus Christ of Latter Day Saints
29. Clovernook Printing House for the Blind
30. CTEVH
31. Dialogue Publications
32. Editora Nacional Braille
33. En Passant
34. Ephphatha Services
35. Esperanto Services
36. Forward Movement Publications
37. General Council of the Assemblies of God
38. Gospel Association for the Blind
39. Guideposts Associates
40. Hadley School for the Blind
41. Howe Press of Perkins School
42. Jewish Braille Institute of America
43. John Milton Society for the Blind
44. La Leche League
45. Living Museum
46. Lutheran Braille Evangelism Association
47. Lutheran Braille Workers
48. Lutheran Library for the Blind
49. Matilda Ziegler Magazine
50. Media Projects for the Blind
51. National Association for the Visually Handicapped
52. National Braille Association
53. National Braille Press
54. National Deaf/Blind Helpers' League
55. National Federation of the Blind
56. National Library Service
57. New York Association for the Blind, Lighthouse
58. New York Times
59. News Reel
60. Pennsylvania Association for the Blind
61. Piano Technician
62. Reader's Digest Association
63. Recorded Periodicals
64. Recorded Psychological Journals
65. Recording for the Blind, Inc.
66. Royal Society for the Blind
67. Royal National Institute for the Blind
68. Royal National Institute for the Blind, Moon Branch
69. Royal School for the Blind
70. Scottish Braille Press
71. Seeing Eye
72. Services for the Visually Handicapped
73. SIGCAPH (Special Interest Group on Computers and the Physically Handicapped)
74. Sounds of Black Heritage
75. Sunday School Board
76. Swedenborg Foundation
77. Talenstudie
78. Talking Books Publishing company
79. Theosophical Book Association for the Blind
80. UNESCO
81. Unity School of Christianity
82. U.S. Braille Chess Association
83. Volunteer Services for the Blind
84. Word
85. Xavier Society for the Blind

Large Type

Table 6-22 shows that over a third of the respondents who use large print depend on other people--family, and friends--to obtain these materials; roughly a quarter are sent by libraries; and about a fifth are obtained directly from stores, book clubs, subscriptions and publishers. The role of the NLS regional and subregional libraries varies greatly in providing large type: some are very involved in providing large print, others have no large print collections. In the absence of a federal mandate to prepare these materials, the network libraries may wish to consider creating or expanding their large print collections. It is clear that large type is in demand and could account for a potentially significant expansion of NLS services: Of course, this would need to be coordinated with public libraries supplying large type in the same geographical areas.

Recorded Versions and Braille

Recordings and braille materials are obtained largely from libraries (60-75%). Many persons did not single out an NLS cooperating library as their source of materials but simply said "the library." From these data it is clear that the image of the National Library Service, as distinct from the public library system, is not very strong and that the NLS may need an extensive promotional campaign to clarify its identity and its mission.* This may be particularly appropriate in light of the recent name change of the program.

It was rather surprising to us that, given the large number of church organizations transcribing braille, church groups were not spe-

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*Although the NLS does presently utilize public service announcements to accomplish these ends, a still more extensive campaign may be advisable.

Table 6-22

Sources of Reading Materials

	Weighted Sample Size	People	Bookstores, Other Stores, Newsstands, Subscriptions, Bookclubs	-----Libraries ------			Organizations	School/ Rehabilitation/ Training	Church	Other
				All	NLS Specifically	Other Library**				
		Percent								
Large Print										
Newspapers	(299)	45	21	26	5	21	3	9	4	9
Magazines	(300)	39	21	20	8	12	4	4	5	9
Books	(678)	38	8	34	5	29	3	14	2	2
Records										
Magazines	(503)	3	3	75	46	29	11	6	1	1
Books	(798)	9	3	63	33	30	10	12	1	2
Cassettes										
Magazines	(263)	10	1	64	29	35	8	15	2	*
Books	(436)	11	3	58	24	34	6	16	6	*
Braille										
Magazines	(119)	5	7	57	39	18	10	20	1	*
Books	(109)	*	7	65	26	39	*	24	*	5

* Less than 0.5%.

** Includes public libraries and other libraries unless an NLS network library was specified, consequently may underestimate NLS activity.

cifically identified more frequently as sources of braille. Again, we found that many respondents were not certain of the precise source of materials. Though we do not have definitive data on this point, this may be because many families arrange for, or obtain the materials for them. Organizations, including churches, were reported as sources of recordings or braille by roughly 20% of the respondents who used these materials. Schools and rehabilitation centers were being used by 10-15% of the respondents.

Use of Libraries to Obtain Print Alternatives

Libraries have, of course, been the traditional source of reading materials and, until the advent of television and the inexpensive paperback print book, were centers of community life. For persons with print limitations, libraries have been a source of braille since the 1900's, of recordings since the 1930's and of large print only more recently. About half of the respondents were accustomed to using libraries prior to the onset of a print limitation.

We explored the extent of library use to obtain print alternatives, including large type, but, unfortunately, we did not explore the use of libraries to obtain regular print materials. Nevertheless, it is our sense that borrowing books and magazines in any medium, including print, from libraries is not very common now among persons with print limitations. Nor is obtaining information from libraries, as we saw in Chapter 5. Overall, we estimate that about 26% of all readers, or slightly more than 20% of all respondents, had used any kind of library in the past four months to obtain print alternatives. About 60% of those now using libraries to obtain print alternatives had used libraries for print at one time or another. As we expected, persons who enjoy reading most do it more than others: 30% of the readers who say that they enjoy reading a lot use libraries to obtain print alternatives, compared to 15% of the readers who do not enjoy reading much.

Readers between the ages of 17 and 44 made more use of libraries to obtain print alternatives than did other adults, and school age children used libraries least as seen below:

Age	Percent of Readers Using Library
6-16 years	16
17-44 years	34
45-64 years	24
65 years and over	25
All ages	26

Males and females did not differ in their use of libraries. But whites used libraries twice as often as non-whites (28% compared to 13% overall: only in the age group 17-44 are their rates of utilization nearly comparable.

Use of libraries to obtain print alternatives was, as we expected, highly associated with education. Barely 15% of the readers with an elementary school education obtained print alternatives from libraries, but 28% of those who attended high school obtained materials from libraries. Library use is not associated with the family income of the respondents.

Geographically, readers from the northeastern, western and midwestern states used libraries about equally to obtain print alternatives (28-32%); readers from the southern states used them least (19%). Readers in non-metropolitan areas used libraries to obtain print alternatives about a third less often (20%) than readers in metropolitan areas (28%). These regional and urban rankings tend to hold when the data are controlled for age, with use in the Northeast being consistently highest by a few percentage points.

Library use appears to be related to the typology of reading limitations as seen below:

Reading Limitation Typology	Percent of Readers Using Library to Obtain Print Alernatives
Single Limitations	
Seeing	36
Learning	6
Physical	8
Multiple Limitations	
Seeing & Physical	28
Seeing & Physical & Learning	20
Seeing & Learning	19
Physical & Learning	5

Readers with "seeing only," and "seeing and physical" limitations made the greatest use of libraries to obtain print alternatives. Among the readers with seeing limitations, persons who were legally blind were three times as likely to use a library as those not legally blind.

In contrast to the some 20% of the respondents who used libraries to obtain print alternatives in the past four months, about 28% of the adult U.S. population, or about half of the print book readers in the 1978 Yankelovich study, had borrowed books from a public or school library in the past six months. The Gallup Organization's 1975 study of library usage estimated that 49% of the U.S. adults had visited one of America's 29,000 public school and private libraries in the past two years, and 47% of them had used a public library.* Significantly, 17% of the U.S. adult population has never used a library, in comparison with 53% of the respondents who reported that they were not accustomed to using libraries prior to the onset of their print limitations. A third of those who were accustomed to using the libraries to obtain print materials are using them now to get print alternatives, whereas about a fifth of those who were not accustomed to using libraries for print are now using them to obtain print alternatives. As expected, use of libraries is positively associated with reading activity.*

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*Although about 35% of the population have public library cards, only 10% use them as frequently as once a month. More than half of the users (57%) live within two and a half miles of the public library they frequent most often, but 22% live five or more miles away. Hence, the implication is that proximity is not a major deterrent to use.

Most public library activity is concentrated on loaning books, as is most activity in libraries supplying print alternatives. A relatively small percentage of the respondents were aware of the reference and referral services that are commonly offered in NLS regional libraries. (See Volume 4 on services available at NLS libraries.) Curiously, such non-book loan services are precisely those services which non-users of public libraries in the general population said would prompt them to use local libraries. It is likely that such services are in demand among persons with print limitations as well, and would induce them to use libraries more were they aware of them. Another factor which may help to explain the low utilization rates of libraries supplying print alternatives is the fact that the materials they provide are predominantly recreational materials, while many of the respondents expressed a greater interest in informational materials.

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*One out of two of the avid readers used libraries to obtain print alternatives, compared to about one out of seven sporadic readers.

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H. FACTORS INFLUENCING WHAT PEOPLE READ AND HOW MUCH THEY READ

It is necessary to distinguish clearly between what people actually read, and what they would most like to read. The assumption that people voluntarily read only what they are interested in, and, therefore, that the actual reading interests can be deduced from what is read, seems unwarranted for the general population, and probably has even less justification among persons with print limitations, for whom the choice of reading materials is more limited.

One has only to think of how one selects articles to read in the daily newspaper--on the basis of the amount of space given to articles, the location on the page, whether there are photos to attract one's attention, the size of the headlines--to see another good reason for rejecting the above assumption. Clearly, these superficial influencing factors have nothing to do with a person's real interests.

There are many other factors influencing what one reads which are independent of the reader's interests, but can be controlled by the author, publisher or the distributor to benefit the reader. Among these are: accessibility, readability, promotion, reputation, discussing books with others, and obtaining help.

Accessibility

Our data show that about half of the target group gets help in the selection and acquisition of reading materials: 19% depend on other people to read to them as their primary reading method, and 24% use readers as their second favorite way of reading. Many print-limited persons, then, may read about a subject that has little interest for them because the material was of interest to their helper or was readily available. Conversely, if materials of interest are not available, one may not read about a particular subject of interest or one may not read at all.

One reason why newspapers are so widely read by persons with print limitations (despite their limitations) may be their ready access. One can have a newspaper delivered to one's doorstep almost anywhere in the country or, if not that, get it through the mail. Another reason is that, unlike books, there is no need to choose a single subject or author. The newspaper covers a broad range of subjects, is contributed to by various writers, and brings people into immediate contact with others who are reading about the same issues.

For many persons who have print limitations, the newspaper may take longer to read than for persons without such limitations. For others, the newspaper may be all they have time for. However, as we have shown, the most avid readers read books and magazines as well as newspapers.

Readability

One may decide to read a book or magazine because the literary style or language in which it is written is appealing. Or, conversely, one may choose not to read if the piece is too long, too difficult, or the literary style is unsatisfactory. About 55% of the target population said that they were reading materials of a shorter length now than before the onset of their reading limitations. Recall also that 36% of the overall group reported themselves unable to read for more than a few minutes duration because of weakness and fatigue, and 10%

said that reading over extended periods was difficult. The implication of this for NLS is clear: it would be worthwhile to consider selecting shorter pieces and those written in a relatively simple language and style.

Promotion

One may read because a book or magazine has acquired a special value through favorable reviews, commercial advertising or promotional matter sent to homes; positive book reviews and books on best seller lists are both strong inducements to read. What is even stronger though are word-of-mouth reports, and seeing a book being read all over town. To persons with print limitations, listings of available materials may have the same impact as other sorts of promotional matter do for regular print readers.

Mann's study of book buyers (1971) determined that the most common ways for the general public to learn about reading materials were by: seeing materials in bookshops, other retail outlets, libraries, and homes;* hearing conversations, radio and television programs and cinema adaptations; reading direct information received from specialist direct mail services and book clubs;** and reading reviews and advertisements in newspapers, magazines, and specialist journals.

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*The 1970's have seen a shift in distribution channels. In part, this is the result of the sharp growth of paperback books: then too, the number of bookstores has increased fourfold since 1950 to nearly 12,000 in 1976 (Grannis, 1979). At the same time, however, the expanded retail sales through drugstores, supermarkets and non-retail sales through book clubs (56 clubs in 1958 to 200 in 1975) reflect a relative shift of book acquisition away from libraries and institutions like schools (American Book Trading Directory, 1977).

**Unlike the U.S. general adult population, of whom 9% are members of book clubs, relatively few persons with print limitations belong to book clubs.

Subject interest, awareness of an author and recommendations by a friend or family member are the prime guides to book and magazine selection in the general public (Yankelovich, 1978) and may also be important for persons with print limitations. Americans are also strongly influenced by promotional matter on magazine covers and book jackets discovered through browsing, and do a good bit of impulse buying. As we have seen, persons with print limitations read a lot of print, whether they themselves obtain it or not, and may be susceptible to the same promotional influences. In addition, about a quarter of the book readers in the general population said that television dramatization of books influenced them to later read the book from which the TV script had been drawn (Gallup, 1978). Though we have no data on whether print-limited persons are similarly influenced, they watch TV nearly as much as persons in the general population and, therefore, may also be prompted to read things they have already seen on television.

Reputation--One may also select a book or periodical because it is reputed to have certain favorable attributes, such as prestigous authors, whose names lend credibility to the work, or a particular method by which the contents were developed which lends credence to its content. For persons with print limitations who read by listening to recordings, the quality of the narration, or the pleasingness of the narrator's voice may be more important than the text itself.

The selection of authors, periodicals and narrators that meet the requirements and preferences of readers may best be accomplished by incorporating regular reader input early on in the selection process. All organizations preparing print alternatives are encouraged to make use of this input.

Discussing Books with Others--The opportunity to share ideas gleaned from newspapers, books and magazines was one of the eight functional elements proposed in Chapter 1 as a motivating factor for reading. Nearly two-thirds of the readers in the target group said that they talked with friends and family members about materials they might enjoy reading. Many of them, it seems, were motivated to seek out best sellers and other books by title as a result of these conversations.

As seen in Figure 6-20, discussing books is also associated with higher levels of reading: avid readers discussed reading much more than sporadic or occasional readers. It seems clear that discussing books and magazines with others is a stimulus to further reading, and conversely, that avid reading stimulates one to want to discuss what one has read with others. A cycle apparently develops: the more one is able to share one's reading experiences, the more enjoyable those reading experiences become, and consequently, the more one will be inclined to read and share those experiences.

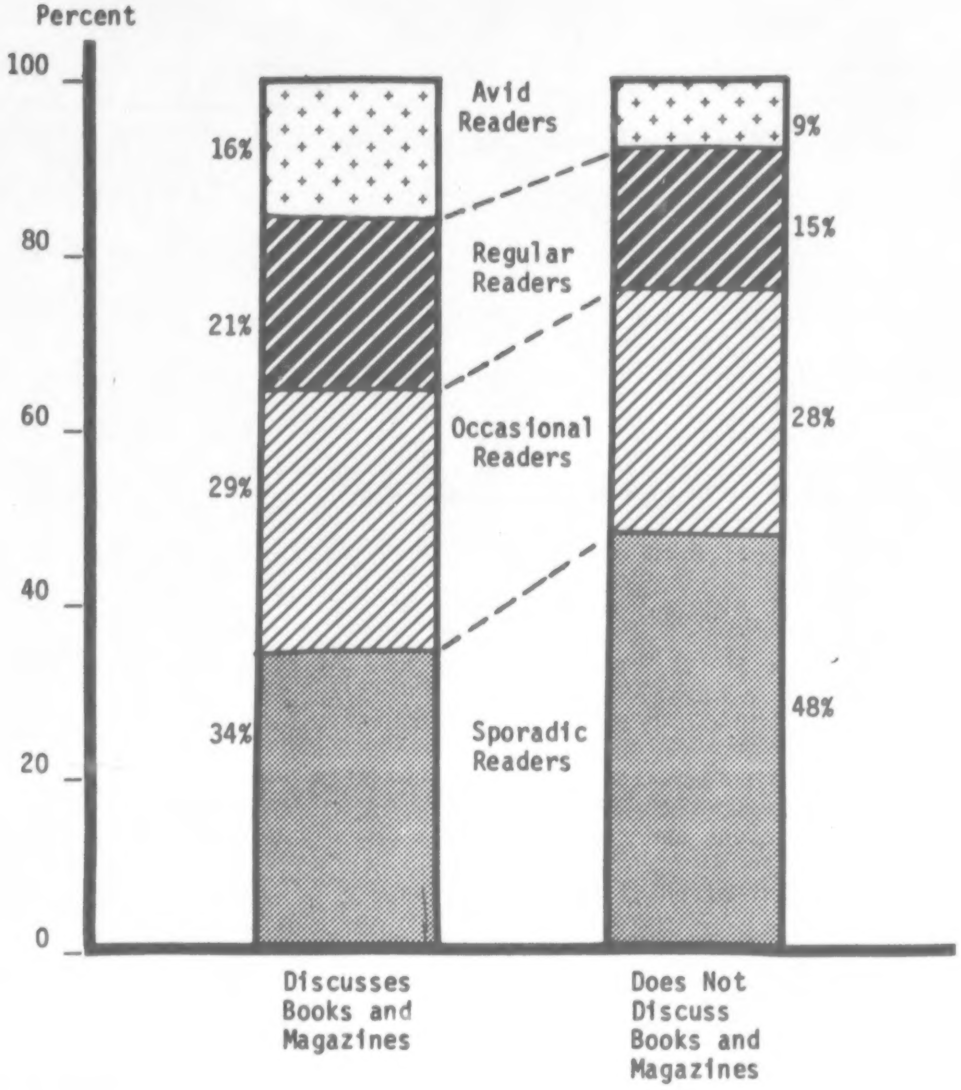
Reader clubs and reader advisors organized by the NLS may provide just this sort of positive stimulation.

Obtaining Help

Getting help in reading influences both what people read and the amount of time they spend reading. Having already discussed the factors affecting reading preferences above, we will focus here on the influence of help on reading activity and ways of reading.

Figure 6-20

Association of Amount of Time Spent Reading With
Sharing Ideas About Reading With Other Persons--Effect of Sharing



The great majority of the respondents say that they get help in reading from other people:

26% get help in selecting materials;

32% get assistance in ordering reading materials;

42% receive help in going to the post office to send things off;

47% get help in obtaining the desired materials;

10% are assisted in making recordings;

15% receive help in operating the record and cassette players; and

19% get help in other ways.

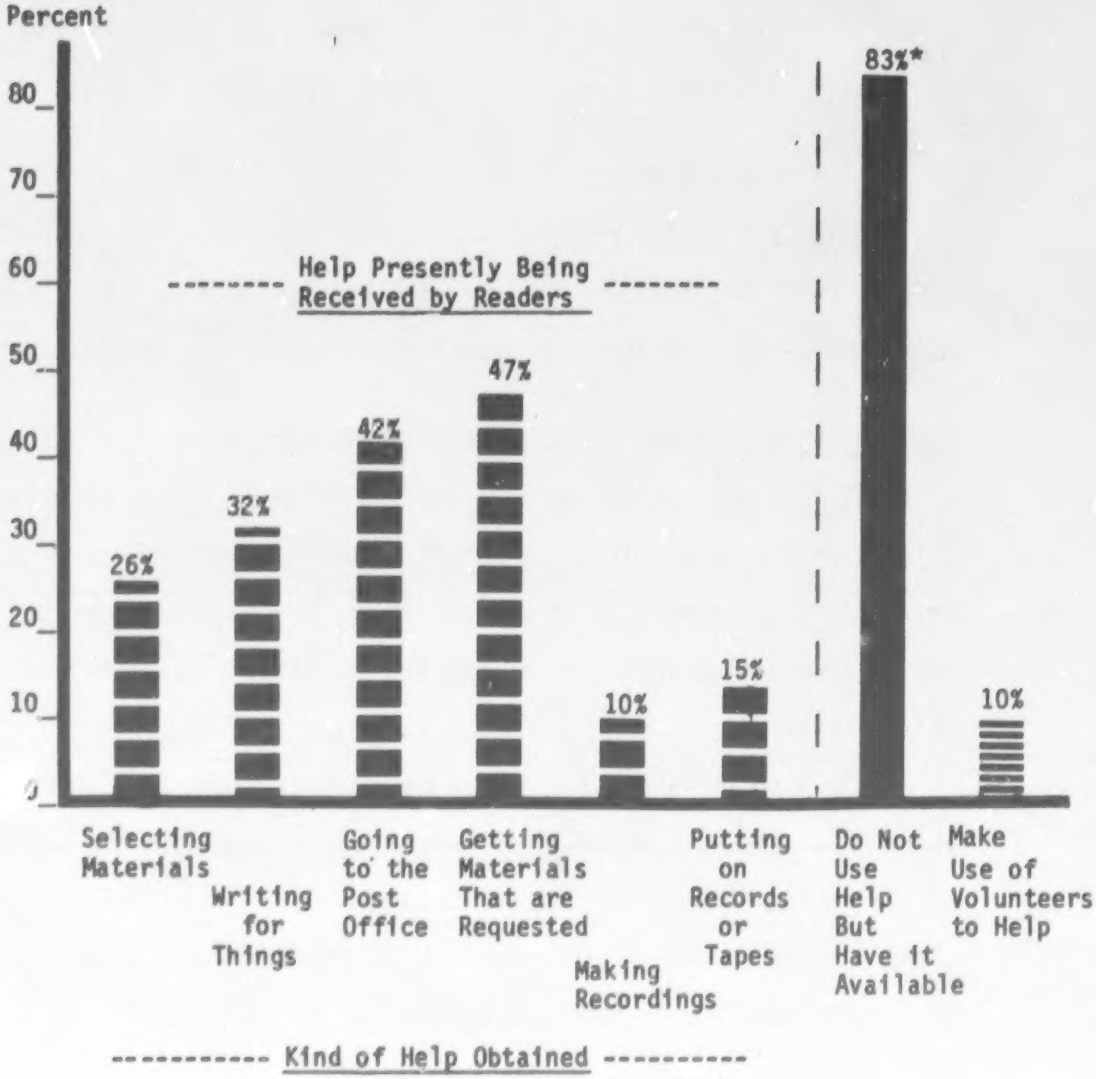
Additionally, 83% of these people who do not currently get help in performing the various reading-related tasks say that they have someone to call for help should they need it (see Figure 6-21).

Sources of Help--About 83% of those persons who are getting help receive it from someone in the household; and 25% or so get help from friends or neighbors. Fewer than 10% of the NLS subscribers we surveyed used paid readers. Teachers, tutors, nurses, relatives and librarians were also specified as reading assistants, but were used only infrequently.

Only a small percentage of the respondents (less than 10%) are currently making use of volunteers for help in reading. The sources of volunteers were various: libraries, religious and church groups, senior citizen clubs, local organizations for the handicapped, local nursing homes, schools and vocational rehabilitation centers were among the more frequently tapped sources.

Figure 6-21

Help Received in Reading by Respondents



*Percent of those who do not use help.

Influences on Ways of Reading--Some ways of getting help are more crucial than others for the success of the National Library Service program. For example, since recorded and braille books are delivered through the mail and household mail boxes are typically smaller than the braille and record mailing cases, many people must go to the post office to collect NLS materials, and virtually everyone needs to go to the post office or at least a corner mail box to send off parcels.* Consequently, without help in receiving and sending off NLS materials, the 25% of the population with print limitations who are confined to their homes or beds on account of mobility restrictions, are not likely to be able to make much use of the NLS program.

In Table 6-23 we show the relation between the kinds of help that people get and the way they read. This table also summarizes a number of other reading characteristics. Persons who read with recordings get more of almost every type of help examined than persons who read braille, large print or regular print. To illustrate, 48% of those who use records get help in selecting materials, 54% get help in ordering materials, and 61% have someone else go to the post office for them, as compared to 37% of the braille readers who get help in writing for materials or 58% who have someone else go to the post office for them. Additionally, about a quarter of the persons who read with recordings

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*There was a time when the Postal Service delivered packages, and in many parts of the country this may still be the case, but in cities like New York, people are often in the position of having to go to the post office to collect parcels regardless of the size of the package.

Table 6-23

Selected Reading Characteristics by Ways of Reading

	All Ways	Someone Else Reads	Regular Print	Large Print	Records	Cassettes	Braille
	Percent						
Amount of Reading							
0-3 hours	37	44	34	33	30	26	28
4-7 hours	29	27	32	29	24	28	17
8-14 hours	19	17	20	24	22	24	33
15 hours and over	14	12	14	13	24	23	22
Satisfaction With Amount of Reading Now as Compared to Before Reading Limitation							
Much Less	48	53	46	59	45	46	15
Somewhat Less	23	20	24	22	21	20	31
As Much	29	27	30	19	34	34	54
Presently Reads Less/Same/or More Than Before Reading Limitation							
Less	70	78	66	73	69	64	49
Same Length	17	11	20	12	16	13	26
More	13	11	14	15	15	23	25
Length of Materials Read Now is Shorter/Same/Longer Than Before Reading Limitation							
Shorter	55	65	52	60	40	34	29
Same	36	27	39	32	51	51	53
Longer	9	8	9	8	9	15	18
Has Accustomed to Using Libraries Prior to Onset of Print Limitation	47	46	46	51	60	72	47
Discusses Books and Magazines	64	68	65	71	75	76	80
Gets Help With							
Selecting Materials	35	46	31	43	48	44	34
Writing for Materials	38	52	27	32	57	53	53
Going to Post Office	46	56	35	45	61	54	58
Obtaining Materials	57	69	48	62	72	67	74
Making Recordings	14	19	10	13	26	36	30
Putting on Recordings	19	29	14	17	27	28	8
Other	22	33	15	21	30	31	15
Has Interest in Volunteers	30	41	25	36	34	40	45
Weighted Sample Size*	(3560)	(1706)	(2109)	(881)	(833)	(448)	(174)

*Sample size varies by about 5% for different questions.

get help in operating the cassette and/or record players. From these percentages it is evident that persons with print limitations both need and receive a lot of help in obtaining and using reading materials--so much so that the concept of assistance in reading might be emphasized to a greater degree by the NLS in its lending service.

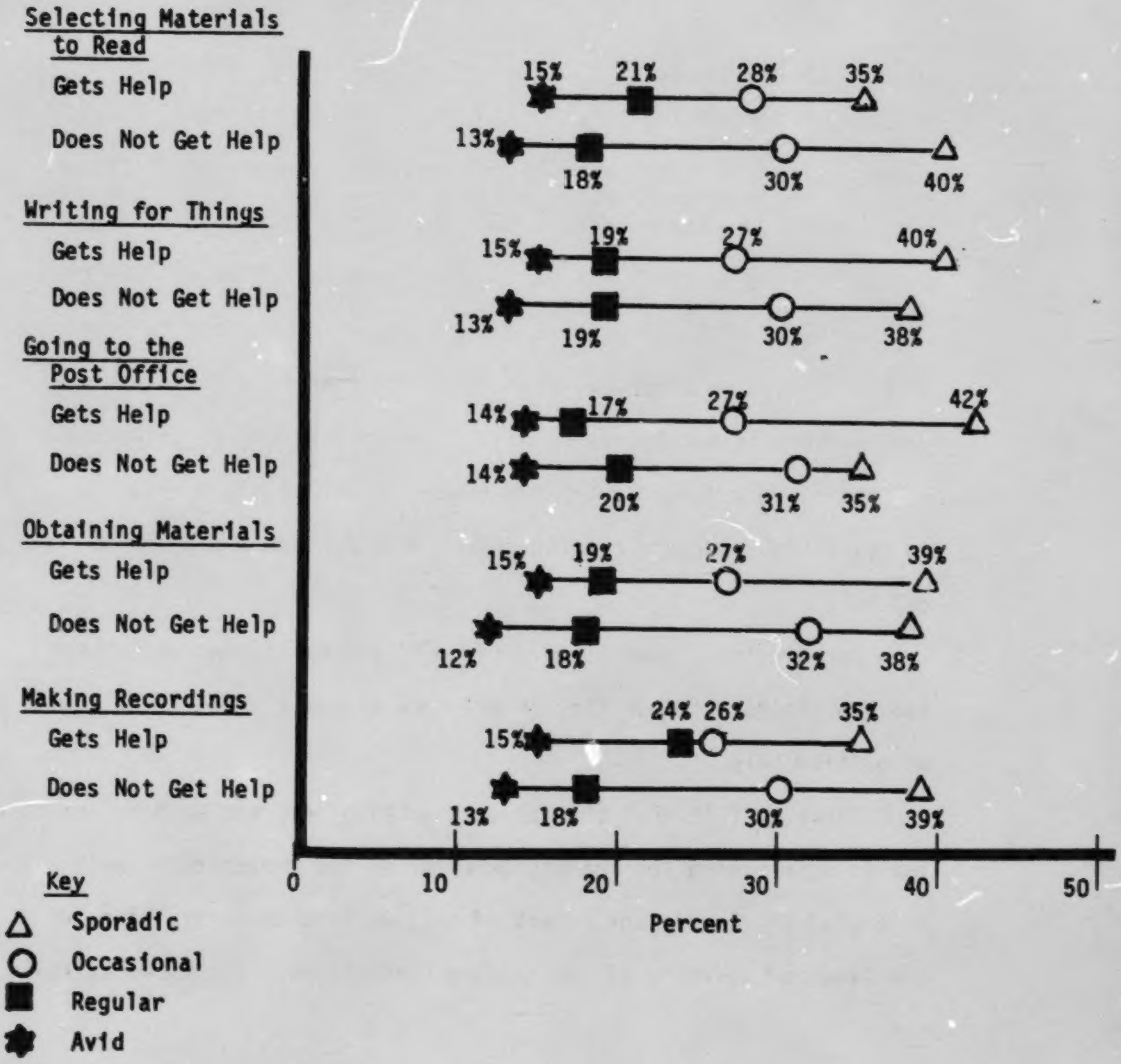
Influences on Time Spent Reading--Two things would seem to happen as a result of getting help: one, persons who do not read at all become readers--though possibly only sporadic readers at first; and two, persons who are readers either spend more time reading or choose to read in different ways. The first effect is not one that can be tested with our present data, since we cannot see the dynamics of the process by which non-readers become readers. But clearly, getting help is not likely to have a negative effect on reading activity. If getting help does convert non-readers, then we might expect to see a high sporadic reading group among persons who begin to get help.

Our findings, shown in Figure 6-22, are consistent with these two hypotheses although they do not show marked or regular effects of getting help.

Since we felt that the issue of getting help was such an important one in determining the reading behavior of the respondents, we attempted to clarify the effect of getting help by controlling for the level of severity of the reading limitations. Our thought, again,

Figure 6-22

Reading Activity of Persons Who Get Help in Reading and Those Who Do Not



was that receiving assistance either with reading or with obtaining materials would result in an increase in the number of people in the sporadic reader category and would permit a general shift toward heavier reading that would be observed in larger percentages of regular and avid readers.

Figure 6-23 shows the results of receiving help with: a) selecting materials to read; and b) obtaining materials. For both kinds, the effect of getting help on persons with single limitations--"minor" and "severe" limitations--seems to be somewhat masked by other factors. But for persons with multiple reading limitations--the "moderate" and "very severe" categories--getting help is associated with at least 10% increments in the proportion of regular and avid readers.

Thus, receiving assistance seems to be essential for persons with multiple and compounding limitations: first, because with help these persons read more than without; and second, because, as we noted earlier, these persons appear to spend less time reading than persons with single limitations. This is an important conclusion for the NLS, and appears to have ramifications for the issue of utilization, which we take up in the next chapter. For as we show there, the NLS program is used least by persons with multiple reading limitations and compounding restrictions.

Interest in Volunteers--Volunteers serve as another important source of help, complementing that provided by friends and relatives. An individual's interest in having volunteers help in the tasks of reading varies not only with his/her reading level and the severity

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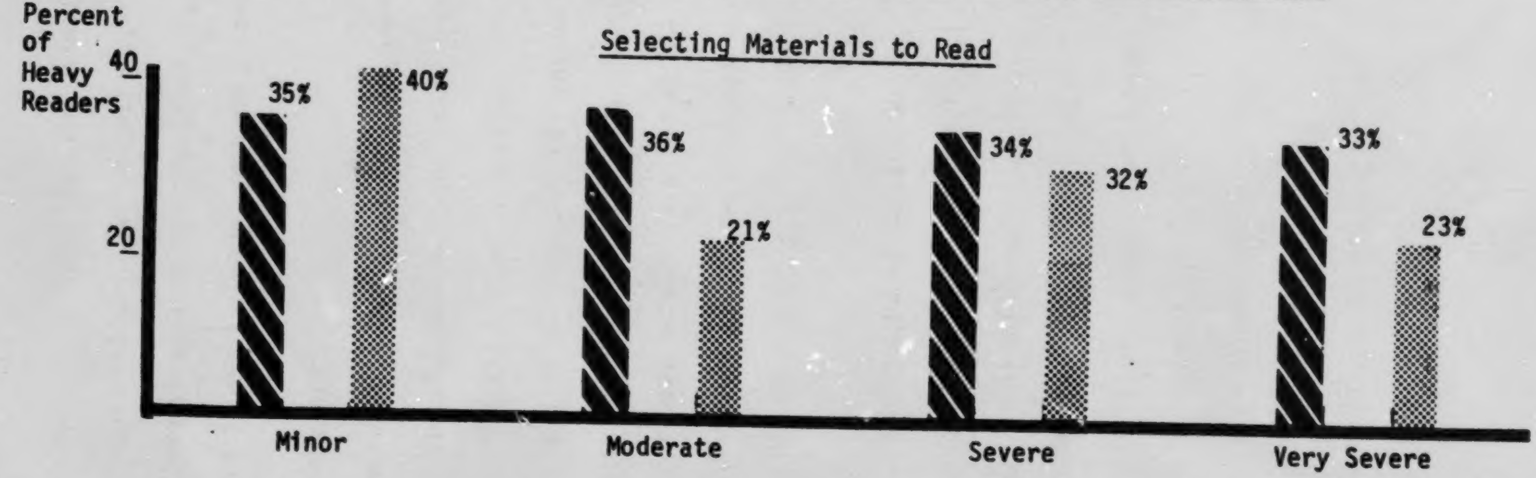
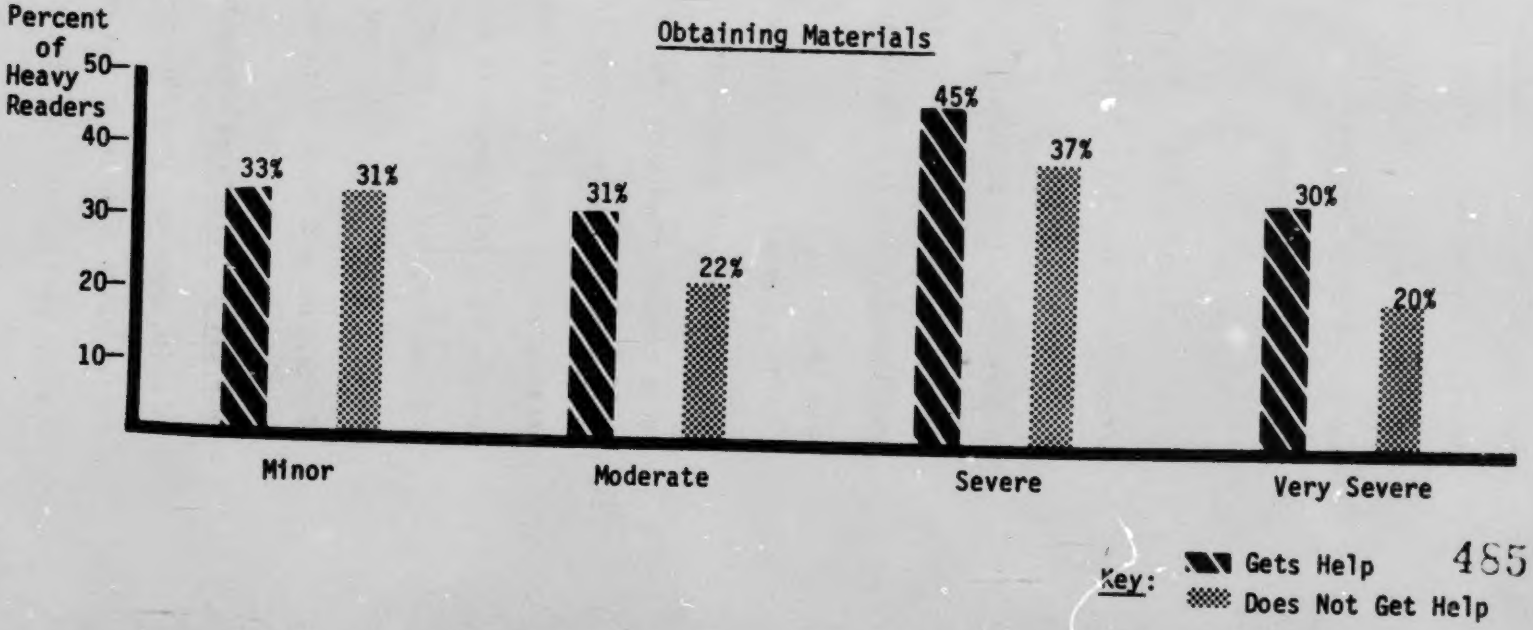
Figure 6-23

Influence of Getting Help on Reading Activity by Severity of Reading Limitations


Selecting Materials to Read


Obtaining Materials

of the limitation, but also with the way in which reading is done (see Figure 6-24). Significantly over 40% of those persons who use recordings, braille, or have someone else read to them, are "very" or "somewhat" interested in having volunteers read to them or help them in other ways. The interest in having volunteers is lower among persons who can read regular print (25%) and large print (36%). About a quarter of all of the respondents, including the 20%-25% who do not read at all, say that they are very or somewhat interested in volunteers.

People tend to exaggerate their interest in a given service when asked whether they would use such and such a service were it available.* Nevertheless, the level of interest reported indicates that more readers, reader advisors, and equipment operators are desired than can probably be arranged for and funded. It also shows a potentially large demand for volunteers and self-help programs, as well as services like special reading programs broadcast over the radio.

The parents of younger persons are much more interested in volunteers than are older persons: 49% of the parents who have children in the 6-16 age group are very or somewhat interested, compared to 31% of the persons between 17 and 44 years, 20% in the age group 45-64 years, and 21% of the persons who are 65 years and older.

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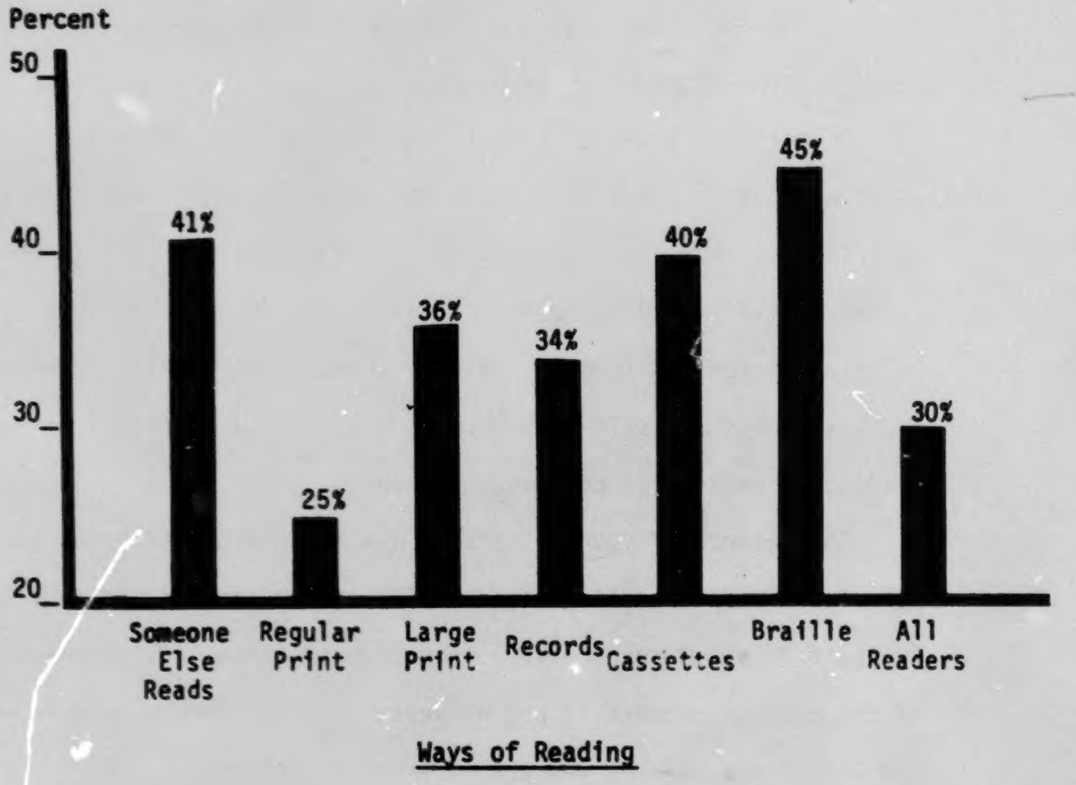
*The exception to this is older people who tend to respond negatively toward helping services (Moen, 1978). See Chapter 5.

Figure 6-24

Interest in Volunteers to Help in Reading by Way of Reading



I. SATISFACTION WITH READING

What are the factors that can be used to assess the respondents' satisfaction with their reading habits? We selected three indices:

a) the amount of reading presently done relative to that done before the onset of the respondents' reading limitations;

b) reported satisfaction with the amount of reading; and

c) the length of materials currently read compared to that before the reading limitations began.

The first indice was intended as a point of reference; in order to gauge the respondents' satisfaction with reading now, we had first to establish the extent of their interest in reading (which we took to be reflected by the amount of time they spent reading) prior to the onset of their limitations. In that way we could roughly gauge the effect of the limitation on the initial interest in or satisfaction with reading. In itself though this measure is not sufficient, because many other factors might intervene to either attenuate or strengthen one's interest in reading, and consequently, the amount of time one spends at it, which have nothing to do with the limitation itself. Thus, we also asked the respondents whether they were content with the amount of reading they were doing. In addition to buttressing the first indice, we thought the responses to this question would provide information about what sort of services are needed, whether more are needed, and what problems there are, if any, with the services that are currently offered. And finally, we selected the third indice in the hopes of determining whether the same phenomenon that occurs in the general population--namely that as people age and their activity levels decline they begin to read shorter pieces--is true of persons with print limitations as well. Our interest in this was twofold: we assumed that there were parallels between the two populations and, therefore, that many of the same sorts of accomodations that are necessary to maximize the satisfaction of older persons are necessary for print-limited persons as well, and wanted to test this hypothesis; and secondly, we hoped to ascertain more specifically whether, in addition to the other accomodations that are desirable, shorter reading materials are necessary in order to maximize this populations' satisfaction with reading.

Many other factors might also have been considered, such as whether the materials that respondents want to read are easily obtainable, or whether they are current enough. Some of these issues are taken up in Chapter 8, where we discuss the NLS subscribers' satisfaction with the NLS program.

Amount of Reading Done Now--Of those persons who did not have reading limitations before they were seven years old, slightly less than three-quarters (74%) said that they were reading much less now than before the onset of their limitations; nearly one-fifth (17%) said that they were reading about the same amount; and one-tenth (9%) of the respondents said that they were currently reading more than before the onset of their reading limitations. These data appear in Table 6-23.

As might be expected, persons who were sporadic or occasional readers before the onset of the limitation tended to say that they were reading even less now, while, not so expectedly, the relatively avid readers tended to report that they were reading more heavily now than before the reading limitation developed.

Satisfaction with Amount of Reading--Significantly,   % of the avid and regular readers said that they were reading much less than they would like, and   % said that they were reading somewhat less than they would like. Only 26% of all respondents said that they were content with the amount of reading they were doing, suggesting that a reading service geared to the full range of their needs might be extremely successful. (The various components that make up the "full range" of the subscribers' needs will be flushed out in Chapter 8.)

Length of Materials Being Read--A bit more than six out of ten (63%) of the current subscribers who suffered a reading disability after the age of seven said that they were reading shorter materials now than before the onset of the limitation. About one-third (31%) said the materials were of the same length, and only one out of 16 persons (6%) said that they were reading longer pieces. Nearly half of the sporadic and occasional readers, who comprise nearly 70% of the readership group, are reading shorter pieces.

Variations in the three satisfaction indices by specific reading limitations for all respondents are also shown in Table 6-24 and by type of media used by readers in Table 6-23. Surprisingly, large

Table 6-24

Reading Satisfaction Indices by Reading and Compounding Limitations

Reading Limitation	Weighted Sample Size*	Total	A.			B.			C.		
			Compared to Before Onset of Limitation Presently Reads			Presently Reads			Compared to Before Onset of Limitation Presently Reads Materials of a --		
			Much Less	About the Same	Much More	Much Less Than Would Like	Somewhat Less Than Would Like	As Much as Would Like	Shorter Length	Same Length	Longer Length
		------- Percent ------				--------- Percent ----------			----- Percent -----		
Seeing											
Difficulty	(2040)	100	66	25	9	47	26	27	55	38	7
Unable	(2553)	100	84	10	6	50	18	22	74	23	3
Holding											
Difficulty	(593)	100	79	12	9	59	16	25	69	30	5
Unable	(386)	100	77	11	12	58	15	27	67	26	7
Turning											
Difficulty	(472)	100	79	15	8	61	15	24	59	39	2
Unable	(332)	100	79	10	11	58	15	27	70	25	5
Sitting Up											
Difficulty	(331)	100	77	15	8	63	20	17	67	30	4
Unable	(311)	100	80	10	10	62	11	27	67	27	6
Weakness											
Difficulty	(559)	100	83	11	6	52	24	24	66	29	5
Unable	(1986)	100	80	12	8	66	17	17	72	25	3
Learning											
Perception	(1067)	100	57	21	22	74	15	11	60	31	9
Memory/Confusion/Attention Span	(278)	100	50	23	27	76	15	9	63	27	19
Mental Retardation and Other	(62)	100	54	13	33	61	31	8	75	19	6
Compounding Limitations											
Mobility											
No Difficulty	(2291)	100	48	23	29	68	22	10	59	33	8
Some Difficulty	(491)	100	54	30	16	79	13	8	62	36	2
Needs Aid or Person	(960)	100	49	21	30	75	16	9	63	33	4
Confined to Home	(972)	100	65	14	21	83	12	5	75	22	3
Confined to Bed	(301)	100	58	19	23	78	8	14	63	31	6
Hearing											
No Difficulty	(3591)	100	51	22	27	73	18	9	63	31	6
Hard of Hearing or Deaf	(1479)	100	56	20	24	77	14	9	65	30	5
All*	(5070)*	100	74	17	9	53	21	26	63	31	6

*Sample size given for item C. Sample sizes for A and B are slightly larger.

variations are not seen between those persons who cannot perform reading tasks and those who have difficulties. Based on the three measures proposed, a very large proportion of the respondents are dissatisfied with their level of reading activity and would like to increase it. Braille readers (who make up only a small proportion of the NLS users) tend to be much more satisfied with the amount of reading they are doing, and to report utilizing materials of longer duration than before the onset of their limitations more frequently than readers of other media.

The general tendency to alter one's reading habits with the onset of a reading limitation (i.e., to switch to shorter length materials) might be paralleled by an attempt on NLS's part to provide more of the desired shorter pieces, like short stories, in proportions commensurate to the demand for them.

SUMMARY

Compared to nearly 95% of the general adult population who do some reading, 80% of the population with print limitations read, with assistance if need be. Given that there are substantially more readers in the general population than in the print-limited population, it is striking that the proportion of book readers is about the same for each group. Assuming that it is more pleasurable to read an entire work than only snatches of written materials, one might expect persons with print limitations, for whom reading is more laborious and time-consuming, to select shorter reading materials, such as newspapers and magazines, so as to maximize the pleasure they derive from reading. Indeed, many of the respondents reported that they had shifted to reading shorter materials since the onset of their print limitations. But is is clear that many persons are both sufficiently interested in, and capable of, reading books and do so, despite their limitations. This bodes well for the National Library Service, for it suggests that there are many potential subscribers, or more simply put, many persons with print limitations who are interested in reading a variety of materials.

As to the respondents' reading preferences, it is clear that most persons tend to read more than one type of material, if they read at all. Aside from the 20% of the respondents who are non-readers, 36% read books and magazines as well as newspapers, another 13% read books plus either magazines or newspapers, and 10% read both newspapers and magazines, but not books. In contrast only 21% of the respondents read just one type of material; not surprisingly these persons tend to be the lightest readers. As far as the reading interests of the respondents are concerned, this population, like the population at large, is somewhat more interested in non-fiction than fiction, though both types of books are desired, and they prefer newspapers to books and magazines.

More striking than the findings on the reading preferences of the respondents, though perhaps less auspicious from the NLS' perspective, are the findings on the preferred or most widely used reading media. Printed materials are far more popular among the print-limited than is any other reading format (i.e., print is the primary reading medium for more persons than is any other medium). Many of the respondents who read print reported that they must use special aids such as magnifiers or other lenses in order to do so. But despite the difficulties with regular print, it is the most frequently used medium for 51% of the respondents. Being read to by another person, which is next in popularity, is used most frequently by 19%; followed by recorded versions which are the primary reading media for 15% of the respondents; 14% use large print most frequently; and finally, braille is used most frequently by only 2% of the respondents who read.

On a more sanguine note, it is important to keep in mind that less than a third of the respondents who read use regular print exclusively. Thus, although it seems clear that the majority of respondents who read prefer to use regular print whenever they are able to do so--whether because they are reluctant to venture out and try unfamiliar alternatives, because they are loath to accept helping services of any kind, or simply because they derive more satisfaction from printed materials than any other--it is also true that almost three-quarters of the respondents who read (71%) are potential users of print alternatives. Some of the current non-readers might also be potential users of print alternatives, albeit to a lesser extent, as it is probably more difficult to cultivate in

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non-readers an interest in reading, than it is to interest readers in print alternatives.

Another consideration which bears on the issue of the preference for regular print is the orientation of the NLS, or the image it has among potential subscribers. Of the persons who use print more frequently than any other medium: 40% have physical disorders, such as an inability to read for more than a few minutes without fatigue or an inability to turn pages, and about 40% have print limitations stemming from an "organic dysfunction," such as dyslexia or memory problems, while only about 20% cannot see well enough to read print without using special aids. These findings suggest that many persons with print limitations who primarily read print may be unaware that print alternatives are designed for persons other than those with visual limitations. Furthermore, even if they are aware, many persons whose print limitations arise from organic dysfunctions may have had too difficult a time in attempting to establish their eligibility to persist in the endeavor. As we shall discuss in the next chapter on the awareness and utilization of the NLS, the National Library Service seems to have maintained the image of a service geared primarily to the blind and visually impaired.

This conjecture is further corroborated by the fact that recorded materials, the primary alternative to regular print provided by the NLS, are used more heavily by persons who have visual rather than physical limitations. For example, of the persons who use recordings as their primary way of reading, 91% are unable to see print, while only 57% of these persons have print limitations of a physical nature (either soley or in addition to a visual limitation). Among the persons who most frequently read with braille, 92% are unable to see print, and the remaining eight percent have difficulty seeing it. Apart from the severity of one's visual limitations, the most significant factor in the use of braille appears to be the age at onset of the print limitation. Braille is used more by congenitally blind persons than by persons who suffered vision loss at any other time. Based on evidence from other sources, the total use of braille (including that by school children) appears to be declining now to the point where there is currently only a small group of inveterate braille users. We found that even among the totally blind, only slightly more than one-tenth (11%) use braille as their primary reading medium, and only about one-third use braille at all.

Although the proportion of persons who use braille is small, the amount of reading that braille users do is substantial. Persons who read most frequently with braille are among the heaviest readers, with 62% spending at least an hour a day reading. A slightly smaller percentage of the persons who use recordings as their primary reading medium are heavy readers: 55% read for an hour or more a day. Roughly the same percentage of persons who use large print most frequently are heavy readers as those who use regular print (35% compared to 32%). Persons who are read to are by far the lightest readers: only 13% read for more than an hour a day. Overall, of the respondents who read at all, about two-thirds (68%) are light readers.

Though we did not find a pronounced or regular association between getting help in reading and the amount of time spent reading or the ways of reading, intuitively it seems that getting help might have two types of effects: first, that with personal assistance some non-readers become readers;

and second, that some of the current readers might expand their reading time and perhaps even explore new reading formats. In the first case, the intuition is that many persons may be non-readers not because they are disinterested in reading, but because they do not feel able to select, order or obtain reading materials by themselves. If this is so, getting help in reading presents them with a new option. Similarly, people who are already readers might well opt to read more, or to explore new ways of reading with assistance.

We speculated in Chapter 5 that the respondents' interest in reading was associated with their level of participation in activities generally, and that persons at either end of the participation spectrum would be the heaviest readers. Our findings confirm this: up to a certain point, people who are more active and social tend to read more, and their reading tends to be informational or activity-related. Among the most avid readers, however, are a group of less active persons than the regular and occasional readers,who appear to read not so much for information as for recreational purposes, or to derive pleasure vicariously from experiences they may no longer be able to have directly because of their physical and/or visual impairments.

A similar pattern was found in the association between the tendency to read with print alternatives and the severity of the limitations. Again, up to a certain point, the tendency to read with print alternatives increases with the severity of the limitation. However, when multiple serious limitations are present or are compounded by mobility or health problems, persons appear to revert back to using reduced amounts of regular print and to rely more heavily upon others to read to them. As noted above, persons who read most frequently with regular print or by having others read to them tend to spend the least amount of time reading.

Hence, it is hardly surprising that persons with "very severe" limitations are among the lightest readers: only 27% of the persons with "very severe" limitations read for more than an hour a day. Curiously though, a greater percentage of persons with "severe" limitations are heavy readers (43%), than are persons with either "minor" or "moderate" limitations (39% and 27% respectively are heavy readers).

A more significant determinant of reading activity than either the severity of the print limitation or the level of participation in activities generally is the educational level of the respondents; educational level is also one of the primary determinants of reading activity for the population at large. Both the likelihood of reading with braille or recordings rather than print or another person, and the amount of time spent reading were found to increase with educational level. For example, among readers aged 17-44, the percentage of sporadic readers is much greater if they had only an elementary school education (50% are sporadic readers) than if they had attended college (32% are sporadic readers).

Age, by itself, is also an important determinant of reading behavior: age appears to be a stronger predictor of what types of materials are read, and which media an individual chooses to read with, than it is of the amount of time spent reading. Higher incomes are only weakly associated with heavier reading, and the association disappears when differences in educational level are controlled.

The use of libraries, like the amount of time spent reading, is highly associated with educational level. The percentage of college-educated persons who used a library was nearly twice that of persons who had attended only high school (39% compared to 22%), and approached three times the percentage of persons who had only an elementary school education (15%). Overall, 20% of the respondents reported that they had used a library in the past four months to obtain print alternatives.

On the whole, it appears that the respondents are generally dissatisfied with the amount of reading they are doing now. Almost three-quarters (74%) of the respondents who developed their reading limitations after the age of seven said that they were reading considerably less now than before the onset of their print limitations. Only slightly more than one-quarter (26%) are content with the amount of reading they are now doing.

Though it is impossible to conclude from the fact that 74% of the respondents are reading less now than before the onset of their limitations, that they are doing so because of their limitations, we do nevertheless know that the same percentage of persons (though not necessarily the same persons) are dissatisfied with the amount of reading they are now doing and would like to increase it. Two immediate steps that might be taken to increase the level of satisfaction with reading are: one, to make sure that there is a wide variety of materials to choose from covering a broad range of topics; and two, to provide a greater assortment of shorter pieces, since as many as 63% of the current subscribers whose print limitations developed after the age of seven indicated that they were reading shorter pieces now.

We return, in Chapter 8, to the issue of satisfaction with the NLS program, and provide a more in-depth discussion both of the areas of the program which need improvement from the subscribers' standpoint, and the aspects of the program which the subscribers are satisfied with as they stand now.

CHAPTER 7

AWARENESS AND UTILIZATION OF THE NLS PROGRAM

This chapter begins with a brief discussion of the organization and operation of the National Library Service program. It then presents findings and an interpretation of the data concerning the awareness and use of the program by the respondents.

A. COMPONENTS OF THE NLS PROGRAM

Organization and Funding of the NLS Program

The National Library Service is a decentralized library service which provides free recorded and braille versions of books and magazines to persons who are either unable to read, or have difficulty in reading regular print. Books and magazines are distributed almost entirely through the mail and only very rarely do subscribers actually visit a library.

The program consists of two components: a central coordinating office located in Washington, D.C., which is a unit of the Library of Congress and is funded entirely by the federal government; and, as of September 1979, a network of 159 regional and subregional libraries, which receive funds primarily from state and local sources. Until recently, one of the distributing libraries, for example, operated entirely from private donations and volunteers; but most obtain small grants through arms of the federal government other than the Library of Congress, such as the Department of Labor which supplies funds for library staff under the Comprehensive Employment and Training Act (CETA), and the Department of Health, Education and Welfare which supplies funds under the Library Services Construction Act (LSCA)* and the Social Security Act.

It is the responsibility of the National Library Service to establish policy, including such things as the eligibility criteria, to select and arrange for the preparation of reading matter and equipment,** to arrange for the distribution of these materials, to coordinate interlibrary exchanges, to perform research and administrative services, and to compile and provide bibliographic materials and information services. The regional and subregional libraries, which are designated by the states, subject to approval by the Washington office, assess the eligibility of particular individuals for the service, distribute to subscribers the materials provided by NLS and others which they themselves fund, and make administrative decisions bearing on the operation of the program in the particular regions they serve. This two-part system is designed to give a general coherence to the program, while allowing for the divergent state perspectives and the needs of subscribers in different parts of the country. At present there are 56 regional libraries, in 48 of the states, plus the District of Columbia, Puerto Rico and the Virgin Islands, and 102 subregional libraries located in 26 of the states.

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* For example, the state of Ohio, supported in part by grant funds allocated under the Federal Library Service Construction Act, has recently published a directory on the libraries throughout the state which provide services for the print handicapped. For each of the libraries considered, the reader is given information about the specific services offered, the materials available and the accessibility of the building to persons with physical disabilities. (See State Library of Ohio, 1977.)

** Generally, books are only selected for preparation if they have received several favorable recommendations from recognized sources, such as the Kirkus Reviews or the N.Y. Times Book Review, though in some cases a book may be produced on the recommendation of the regional or subregional libraries, if a sufficient number of libraries make the request for the same title.

*** Any local public library or other organization serving more than 200 readers may apply to the appropriate regional library to become a subregional library for residents in its surrounding areas.

The annual state and local outlays for network library services for the fiscal year 1977 were, on average, $4 per eligible state resident. This compares to a federal outlay of about $10 per eligible person annually. The average ratio of eligible persons to paid regional and subregional library staff was roughly 2,500 to 1 across states. However, there are wide fluctuations in these measures between states. Outlays per eligible person range from about $2 to $10, and the ratio of eligible state residents to full-time equivalent staff ranges from about 500 to 1 to 5,000 to 1.* (For further details on the exact breakdown by region of outlays per eligible person by region, and for a discussion of current issues in the operation of the NLS see Volume 4 of this report.)

The NLS program is virtually dependent on the U.S. Postal Service to deliver materials in a timely way. All NLS materials distributed through the mail are sent "free matter for the blind and physically handicapped." These deliveries receive a relatively low postal priority despite Congressional subsidies to the Postal Service of $9.5 million in FY 1979 for this class of mail. And although NLS has had significant contact with postal officials on various aspects of shipping and handling--e.g., the proper containers for bulk-handling centers--timely deliveries are still a problem.

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*The varied sources of funding and staffing make comparative analyses difficult. Hence, these figures are presented only as tentative gross measures. There are many differences in library budgets depending on how LSCA and CETA funded positions are treated. In addition, among other factors, a lack of equivalence in staffing, a lack of comparability in the treatment of library rent payments, and usage of volunteers have not been taken into account in these measures.

Eligibility Requirements

The eligibility stipulations for the services offered by NLS, which are set forth in Public Law 89-522, include persons, certified by a "competent authority," who are either unable or have severe difficulty in reading regular print on account of visual limitations, physical limitations, and/or reading limitations resulting from "organic dysfunctions."* (See Volumes 4 and 5 for more on the issue of eligibility and the precise wording of the law.)

In the case of physical and visual limitations, a competent authority may be a doctor of medicine, an ophthalmologist, an optometrist, a registered nurse, a therapist, a professional staff member of an institution, a social service agent, or a professional librarian. For both of these classes of limitations, the cause of the reading limitation can usually be detected without a clinical examination, and thus whether the limitation is severe or minor, temporary or chronic, the certification procedure is generally unambiguous--for example, they can either turn pages of a book or they can't.

The case of reading disabilities stemming from organic dysfunctions, however, is somewhat different. Here, a "competent authority" is defined as a doctor of medicine who may consult with colleagues in associated disciplines. The certification of persons having reading disabilities resulting from organic dysfunctions (such as dyslexia, or other learning disabilities) was reported by librarians to pose major problems due to the fact that many of these disorders are not readily detected by observation. The Washington unit of NLS is aware of these issues and is studying possible changes in the definition of "eligibility" and "competent authority." However, it does not currently recognize librarians as competent authorities in this instance, nor does it consider psychologists, who do much of the evaluation of the functional capabilities of the learning disabled (particularly in the schools), to be competent authorities.

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*These are detailed in the Federal Register 39, No. 111, Sect. 701-10, (1974): pp. 20203-20204.

If a learning disability has an unambiguous physiological basis, such as brain damage at birth, then the individual who has the disability is entitled to use the NLS program under PL89-522. But if the disability is taken to be emotionally based, as some forms of schizophrenia are, the individual having the disability is disqualified. However, the clear identification of a learning disability as physiologically based rather than emotionally based is both difficult and problematic. The current state of scientific knowledge on the basis of many learning problems which now fall under the category of "emotional" problems is so slim and controversial that our present definitions of "emotional" problems versus "physiological" problems may well be modified or supplanted with further discoveries. Emotional problems are in some cases amenable to treatment by drugs affecting physical and mental functioning; abnormal behavior, for example, can be affected by changing the chemical balance of the person. Thus, the present practice of denying eligibility to some persons with learning disabilities while extending it to others under the present

NLS statute may turn out to be based on erroneous conceptions; that is, it may turn out to be based on an insufficient knowledge of the nature of "emotional" problems.

Our study findings suggest that the extension of eligibility under PL89-522 to all persons who have reading limitations arising from visual and physical problems, including all needy persons with learning disabilities, is unlikely to far outstrip the funding capacities of the present NLS program activities. This follows since the vast majority of respondents in our study who have learning disabilities prefer to read print whenever they are able to do so. On the other hand, many persons with learning disabilities who had used the NLS service also noted that the services provided by NLS did not fully meet their reading needs, which suggests that the form in which NLS services are offered may need to be modified for this group.

Subscription to NLS Program

An individual may apply to the program either by mail or by telephone, or in some communities by making a visit to either a local or regional library, a physician, a rehabilitation facility, or a social service agency. A rehabilitation center, school, nursing home, hospital or other agency may itself apply for status as a deposit collection on behalf of its eligible residents or clients. Once the individual's eligibility has been established, the appropriate regional or subregional library contacts the applicant, prepares a profile of his/her reading interests, assesses the applicant's needs and arranges for a record and/or cassette player and the required accessories to be sent through the U.S. postal service to the individual. (In some states the equipment is delivered to the home and training in its use is provided.) The library will also place the applicant on a mailing list to receive one or both of the two bimonthly publications, Braille Book Review (in braille and print) and Talking Book Topics (on disc and in print), prepared by NLS. These publications contain short descriptions of the latest braille and recorded books and magazines available through the cooperating NLS libraries.

Subscribers may then order desired selections either by mail and/or telephone, or they may opt instead to have a librarian make the selections for them, based on their profile of reading interests. According to our respondents, librarians make selections in this manner about a third of the time: individuals may request that books and/or magazines be sent to them at regular intervals, or they may indicate that they prefer to contact the library each time they want new reading matter. Because readers do not always directly participate in the selection of specific titles, books sent by the librarians at their own discretion sometimes go unread and detract from the availability of these materials for other subscribers. (But, of course, books borrowed from public libraries also often go unread, even when the borrower has selected the books for him/herself.) Some subscribers, too, complain of being inundated by books they do not want, but, of course, they are free to change their ordering procedure at any time. And, as indicated above, all reading materials and equipment are sent through the mail to the subscriber free of charge for extended loan, and when the user is through with a selection he/she returns it to the library it came from postage free. Some 46 libraries now have toll free In-Wats numbers and others offer collect telephone calling for subscribers.

Materials Provided by NLS

Approximately 2000 titles were produced in FY1978-79 for distribution to print handicapped persons through the network of regional and sub-regional libraries. The number of new talking book titles currently being produced is 1300-1600 per year. The size of the production quantities of these titles is governed by the Copy Allotment System, according to which NLS libraries indicate to the federal office how many copies they wish to receive (1000 copies is typically considered a mass production run). The number of press and hand copied braille titles has risen in the past five years from 300 to 700 titles annually. The number of braille magazine titles has remained more or less constant, but the number of copies of most of the braille magazines has increased substantially. Consequently, although the number of braille readers has remained stable, circulation has increased.

NLS also provides record and cassette players to Talking Book users and a number of accessory devices such as earphones, pillowphones and remote and speed control units to subscribers upon request. In addition, interested subscribers have access to NLS braille and large print music scores, recorded music books and texts, and elementary instructions on cassette for piano, organ and guitar. Of the estimated 13 million or so books, magazines and music scores circulated to subscribers through the mail in 1977, 82% of these were records, 13% were cassettes and 5% were in braille. (Circulation in FY1978 was 14 million.) Finally, there are some libraries in the NLS/BPH network which provide large print books and magazines at their own expense (not federal expense), though more commonly large print is supplied through local libraries.

To facilitate library loan by subscribers, NLS provides biennial cumulative listings of the braille, disc and cassette titles that have been produced under their auspices in the prior two years, in addition to the bimonthly publications noted above. These listings are respectively: Press Braille Adult, Talking Book Adult and Cassette Books. In a separate volume, Magazines, there is a list of all the magazines and newspapers available on disc, cassette or in braille.* Unlike the bimonthly publications, these cumulative listings are arranged by topic, and alphabetically within categories. In the 1976-77 cumulative listing of braille selections there were approximately 272 non-fiction books and 235 fiction titles, including 30 bestsellers and 41 selections for young adults. The 1976-77 listing of talking book records contained roughly 390 non-fiction offerings and 415 fiction titles, again including 41 bestsellers, four books specifically geared to older adults, 47 books for younger adults and two spanish selections. The 1974-76 cumulative listing of materials available on cassette contained 205 non-fiction titles and 327 fiction works, including 17 selections for young adults and 83 selections for children.** As these three cumulative listings contain many of the same titles, one may choose with many of the selections whether one wants to read it in braille or in recorded form.

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*In the 1978 issue of Magazines, a directory of all of the periodicals available in either raised print, recorded or large print form, there was a total of 252 magazines, 146 of which are available in braille, 68 on cassettes, 55 on discs, 26 in large type, 26 on open reels, and 7 in raised type (Moontype). Though only 64 of these 252 magazines are supplied by NLS, some of the other magazines are available through the cooperating libraries in the NLS network.

**One service which the NLS used to provide for children that has been discontinued is a combined disc/large print format. The advantage of this service was that parents could follow the text along with their children, and that children with partial vision could both see and hear the text. Complicating factors which led to its discontinuation were NLS's reconsideration of the propriety of supplying print books, and the loss of print books from the sets. NLS does, however, continue to supply print/braille book sets, for which there is a great demand.

There were also 64 magazines prepared by NLS, as of April 1978, 33 of which are available on discs, 33 of which are available in braille, and 3 of which are available in cassette form. Only five of these 64 magazines are prepared in both braille and recorded form. The NLS magazines are extremely popular as can be seen from the fact that the direct circulation of magazines on flexible discs to individuals and deposit collections composed roughly one third of the entire circulation of reading materials in 1977. But curiously, of the current 60 odd most popular magazines (W.R. Simmons and Associates, 1976-77) read by 1% or more of the adults in the general population, 10 of these are available in recorded form from NLS, and eight are available in braille. Of the top 20 magazines among Americans, three are available from NLS in recorded form, and four are available in braille. Of course, in addition to the criterion of popularity, those of the appropriateness of format (too many photographs are a problem) and the scope of the magazine must be considered.

NLS also provides a listing of magazines which are produced by other agencies, and some information on how to obtain these magazines. In addition, NLS prepares and distributes bibliographic matter on other materials available to persons with reading limitations through both their office in Washington, D.C., and some of the local libraries.

Distribution of Reading Materials

The braille and recorded materials are selected by and produced for the National Library Service in Washington, D.C., at federal expense, and then disseminated to eligible persons via the regional and subregional libraries. On many issues the distributing libraries act as autonomous units, offering special services where they see a need for them.* For example, some of the libraries transcribe and duplicate materials into braille themselves, or with the aid of volunteers,** while others record and duplicate books and magazines on magnetic tape in their own studios in order to satisfy local interests or to supplement the NLS supplies. A few libraries also operate radio talking book services in which books and magazines are read over the radio to subscribers. Most libraries have large volunteer corps for these purposes.

As noted above, large print materials are provided primarily by the country's 15,000 local public libraries at their own expense, though about half of the libraries in the NLS network also offer large print materials. There are no federal NLS monies allocated to the preparation or purchase of large print books and magazines at this time though. Nor is there a comprehensive, regular periodical describing the few commercially available large print materials that are stocked by libraries in the NLS network.* There are two unfortunate concomitants of this state of affairs: 1) many people must get print materials from one library, large print materials from another library and recorded and braille materials from yet another; and 2) subscribers to the NLS program who might otherwise read large print are not likely to know much about the available collection. Our findings on large print usership among NLS subscribers further corroborate the lack of use of large print: only about 15% of the subscribers who have limitations in seeing reported using large print. Given the study's findings, reported in a previous chapter, showing that many users of recorded and braille media also use print and large print, a more coordinated approach may be helpful. Large print reading materials, however, unlike braille and recorded materials, are commercially available. Therefore, we would hope that any possible future federal funding for large print would not be at the expense of braille and recordings.

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*On the basis of 16 NLS libraries surveyed in 16 different states, it was found that in addition to distributing recorded and braille materials, 100% of the libraries offer reader advisory services, 87% have volunteer recording services, 81% loan record and cassette players and accessories to subscribers, 81% provide information and referral/reference services, 75% transcribe and distribute braille materials, 62% provide and distribute large print, 56% have a toll free telephone service, 56% have machine maintenance and repair services, 50% have automated ordering equipment, and 25% accept collect telephone calls from subscribers. In addition, a couple of the librarians noted that such innovative programs as: personal visits to new subscribers and direct service to institutions have been implemented. (For further details see Volume 4, p. 32).

**Volunteers are heavily relied upon in many libraries where state employment regulations do not restrict their involvement. They are engaged in such activities as: brailling, recording, repairing machines and performing assigned clerical tasks like maintaining reader profiles and finding special references for subscribers. They also act as reader advisors and do some outreach work--i.e., visiting users in their homes and reading to them--which the paid regional librarians do not have time to do.

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*There is, however, a cumulative listing of large print materials called Large Type Books in Print which, like Books in Print, contains information on where to obtain large type books, the publisher and the price of the books. This listing, which is itself printed in large type, is published by R.R. Bowker and Co., every two years.

B. AWARENESS AND UTILIZATION OF THE NATIONAL LIBRARY SERVICE

Is the NLS program perceived as a library program for everyone in the target population or is it perceived as serving only a small subset of its potential users? Does it serve persons of all ages? Does it meet the needs of persons in some regions more fully than those in others? Do utilization rates vary from one region to the next? How does one come to know about the program? What concerns do non-users have about the program? What programmatic changes are necessary, if any, to transform eligible non-users into active users of the NLS?

Having looked at the various components of the NLS program, we are now ready to examine the factors touched on in the above questions, which appear to determine the awareness and utilization patterns for the program.

AWARENESS OF THE NLS PROGRAM AMONG PERSONS WITH PRINT LIMITATIONS

Survey respondents were asked a series of questions designed to determine how many of the respondents were familiar with the program prior to our survey. Persons who expressed awareness of the program were queried further about the extent of their familiarity with the various components of the program, and the means by which they had found out about the program--whether through referral from a current user or NLS outreach activities.

One of the key findings of this study is that the NLS program is used by relatively few of the persons who appear to be eligible for it. Nationally, we estimate that 300,000 persons in the household population are currently subscribers. This figure is much lower than the 1977 estimate of 21,300 persons who use braille and 549,400 readers who use Talking Book records and tapes presented by the NLS to the U.S. House Appropriations Committee Hearings in January 1979 (U.S. House of Representatives, 96th Congress, 1st session, 1979 p. 487.) The NLS media utilization figures do not distinguish between a single subscriber who qualifies to read braille, records and cassettes and three separate subscribers who read only a single medium: hence, an individual reader of different media may be counted two or three times. A subscriber who utilizes different libraries may also be counted twice. The current NLS estimate national media utilization also reflects media use by persons of NLS materials obtained from deposit collections in schools and health care institutions. In Volume 4, we discuss the problems of estimating use from the media data.

The estimates of NLS usership in our study are based on nationally accepted sampling techniques and should reflect a range of error of no more than plus or minus 10%. Hence, our estimate of 300,000 subscribers represents slightly over one in ten persons who, by our calculations, are eligible for the program under its present legislative mandate. In contrast nearly six out of ten of the persons who may be eligible for the program are aware of it. So at first blush, it appears that the NLS program is quite special, in that it is used by only a small minority of its eligible population. However, if we consider the findings presented in Chapter 5 on the help-seeking behavior of print-limited persons in general, this apparent uniqueness disappears. This population availed themselves of helping services, with the exception of medical care services, to about the same degree as they did the NLS program: 18% used help outside the home in travelling, 16% used outside help in performing household chores, 8% participated in organized recreation services, and so forth. (See Table 5-10 for further details.) Thus, in examining the findings on the awareness and utilization rates for this special population, it is important to keep in mind that for a variety of reasons, also discussed in Chapter 5, these persons are not especially receptive to helping services.

Another finding discussed in Chapter 6, which is worth recalling at the outset, is that over half of the respondents prefer to read regular print with magnifiers, special lenses or other aids, if need be, than to seek print alternatives. In contrast, only 19% of the NLS users read regular print. It is hard to know whether the preference for regular print we observed among the print-limited respondents is just another manifestation of their reluctance to avail themselves of services, or whether the preference for print has more to do with habit, familiarity and convenience. One thing that is clear, however, is that NLS users do need print alternatives.

A good portion of Chapters 2, 3 and 4 of this volume was devoted to the premise that to be most effective print alternatives must be designed to meet: a) the full range of reading and compounding limitations of the population with print limitations; and b) the full range of reading interests.

We believe that these two facets of the program, which are within the purview of the NLS, are important elements in distinguishing readers who are utilizing the program from persons who are not using the NLS. (These two points came up frequently in our discussions with current and former users, and get primary attention in Chapter 8.)

In this chapter, we will focus on the two extremes of the awareness spectrum--those persons who have never heard of the program and those who are currently subscribers--to bring out the differences between them. Persons who have heard of, or are familiar with, the NLS and are not using it fall somewhere in the middle of the spectrum, and have characteristics and behavior patterns which are defined by different levels of perceived need for print alternatives or for alternative sources of them. Each of these groups, however, is worthy of further study to determine precisely the environment in which reading is done and the available resources for reading materials. This might best be accomplished by conducting personal interviews in print-limited persons' homes. Readers of this report are directed to Volume 3, where we present a set of case studies resulting from personal interviews conducted in health care institutions.

Levels of Awareness

We categorized persons into five groups on the basis of their awareness and utilization of the NLS program:

Not Aware 43%

1. Never Heard - persons who were completely unaware of the program 43%

Aware .... 57% *

2. Heard of - persons who were aware of the program but not familiar with its components.................... 25%
3. Familiar - persons who have never used the NLS program but said that they were knowledgeable about it....... 18%
4. Former Users - persons who last used the NLS program more than a year ago....... 3%
5. Current Users - persons who used the NLS program some time in the past year........ 12%

100%

Part of the logic of this division stems from the points made above and our decision to tailor our questions to the particular awareness levels of the different respondents. For example, if we found that a person was familiar with the NLS program components, then there was no need to explain the components to them and we could ask follow-up questions directly. We were interested also in the reasons why some persons had used the program and then stopped using it. We thought

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*Due to rounding, the sum of groups 2, 3, 4, 5 adds up to 58%, though, in fact, 57% of the respondents were aware of the program.

that the experiences of former users, although a relatively small group, would both provide some special insight into program bottlenecks and areas in need of improvement, and indicate changes in users' abilities or conditions influencing need. The views of current users, likewise, have both strategic (policy) and tactical (programmatic) implications for the NLS. The results of interviews with the former and current users are presented in Chapter 8.

We want to make the point again that both the "Heard of" and the "Familiar" groups are worthy of further study, since they represent different levels of awareness among persons who had either decided that the NLS program was not for them or simply never acted on a decision that it might be for them.

The process of converting eligible non-users to current users, then, is a dynamic and complex one which involves far more than simply extending awareness, though that, of course, is the first step. We know from our findings on the help-seeking behavior of the respondents and from other research (National Council on Aging, 1972; Delaney, 1978) that many persons have needs which might be satisfied were they to make use of available social services. An educational and advertising campaign is often necessary, however, to encourage people to seek available assistance. Recognizing this, the NLS has launched such a campaign to broaden the awareness of, and willingness to use, the NLS program. How to assess the effectiveness of this effort goes beyond the scope of this study.

Awareness of One's Mail

The high degree of unawareness of the NLS program among persons with limitations is both surprising and troubling in light of the fact that about 80% of our sample, were sent hand-addressed information packets and applications to the program (printed in regular print) by first class mail approximately two weeks prior to the callback interview. These information packets, which were sent to individuals by name, were designed to increase interview participation and completion rates. About half of the packets also contained a post card that could be returned to us indicating a preferred time to be interviewed. (The details on the effectiveness of sending the letters are discussed in the methodology section in Volume 5.)

Our outreach effort in itself, quite apart from the otherwise relatively high lack of awareness of the program, may reveal something about the difficulties inherent in trying to expand awareness among the target population and their families by means of printed materials. Only 8% of the respondents who had been unaware of the NLS program prior to our letter reported that they became aware of it as a result of our outreach information packets; stated another way, we succeeded in reducing the lack of awareness of the NLS program among respondents' households from about 43% to about 40%. The data presented in this chapter, however, reflect only the awareness levels of the NLS program prior to our project (see Table 7-1).*

Since we are interested in the process by which people become aware of and use the program, we have examined factors related to the

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*The effect of including the awareness generated by the AFB information packet in the findings on the awareness levels would have been to reduce the "Never Heard" category by 3%, and to increase the "Heard of" category by 2% and the "Familiar" category by 1%.

Table 7-1

Awareness and Use of the National Library Service--1977

Category	Percent After AFB Survey	
Non-User of NLS		88
Never Heard of NLS	43	
Heard of NLS	25	
Familiar With NLS	18	
Former User of NLS	3	
Current User of NLS		12
Weighted Sample Size		(7199)

awareness that was generated by the AFB information packet, specifically, education, age, income and race, with the hopes of shedding some light on this process.

Unfortunately, however, it is impossible to assess precisely what characteristics of the respondents as individuals, or of their households contributed to the increase in awareness of the NLS program (and conversely, what factors detracted from our outreach efforts) without a great deal of further study. Briefly though, the following questions come to mind. First, who in the household opens the mail? About half of the respondents cannot see to read regular print; which suggests that they may not open their own mail. One-third of the respondents live alone; so again the question arises, who opens the mail for persons with visual limitations who are living alone--a friend, a neighbor, a family member or the disabled person himself/herself?* Since we do not know the process by which people become aware of the contents of their mail, we are on rather shaky grounds in trying to explain how the people who learned of the NLS program as a result of our information packets did so. However, data on the educational levels of persons who reported becoming aware of the program as a result of our packet and of those who did not, indicate that there is a high association between becoming aware of one's mail and educational level. Non-whites, persons from the southern states and from rural areas, and persons with extremely low incomes all seem to be less susceptible to becoming aware through mail outreach, as do persons with lower educational levels generally. The mail was also found to be an extremely poor way to reach totally blind or bedridden persons.

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*As we discussed in the preceding chapter, many people with seeing limitations prefer to read print, and find a way to do so whenever possible, in spite of their limitations. Consequently, many of these persons may open their own mail.

AWARENESS OF NLS AMONG FAMILIES OF PERSONS WITH READING LIMITATIONS

The degree of awareness of, and familiarity with, the NLS program among the families of persons with reading limitations is roughly the same as that among the disabled persons themselves. This is seen below where the responses of family members regarding the awareness and use of the program by persons with print limitations within those households are compared with the responses of persons with print limitations who reside in other households.

	Family Members	Self-Respondents
	---------PERCENT---------	
Never Heard	46	42
Heard Of	23	25
Familiar With	19	18
Former User	3	2
Current User	9	13
Total	100	100
Weighted Sample Size	(2531)	(4667)

One reason for the comparability of the responses may be that the non-print disabled members of a household generally find out about the program either from, or on account of, the family member who has the print limitation. This seems plausible given that use of the NLS program by a household member is generally known throughout the household. On the other hand, it may be that one of the other family members found out about the program and then informed the member with the print limitation. Or, as seems to be the case, the information may be transmitted in both directions. In any case, the apparent communication between print disabled and non-print disabled persons about the program suggests that broad-based outreach efforts aimed at the friends and families of persons with print limitations are likely to be as successful in reaching persons with print limitations as outreach efforts aimed directly at the print-limited persons themselves. Our experience in attempting to reach persons with print limitations by sending materials to them through the mail supports this implication.

Sources of Awareness of NLS

Answers to the question of how the respondents first became aware of the NLS program are given in Table 7-2. Nearly two-fifths (37%) of the respondents who know of the program first heard of the NLS from either a family member, relative or friend, and over one out of three of the persons who informed our respondents had some kind of limitation themselves. "Informal lay referral" systems, then, are extremely important sources of information for this group. This kind of "word of mouth" sharing by disabled persons suggests that the NLS program has a good reputation.

Mass media were the second most important sources of information about the program: about one out of four respondents who are aware of the NLS heard a public service announcement on TV or radio, or saw an article in a newspaper, magazine, book or pamphlet. Television is by far the most effective mass communication medium in reaching the target population, but even so only one out of fifteen respondents first learned about the program from TV over their lifetimes of viewing.

Special schools, special classes, and rehabilitation programs are also important sources of information, although, as we discussed in Chapter 5, neither special nor public schools seem to be as active at providing referral services as they might be: these sources only reached 12% of the respondents who were already aware of the NLS, at the time of our survey. Seven percent of the aware respondents became aware of the program via organizations of, or for the handicapped. The low referral rates of both the rehabilitation agencies and the "consumer" groups was rather surprising in view of the high percentage of legally blind users of the NLS.

Table 7-2

Sources of Awareness of the National Library Service

(How Respondents First Heard of NLS)

	Weighted Sample Size		Percent		
People					36
Family, Relatives		(532)		15	
Those who have limitations	(196)		5		
Those who are using NLS	(32)		1		
Others	(304)		9		
Friends		(815)		22	
Those who have limitations	(280)		8		
Those who are using NLS	(21)		*		
Others	(514)		14		
Media		(867)			24
Television	(433)		12		
Radio	(65)		2		
Newspapers	(120)		3		
Magazines	(101)		3		
Books, Literature From Various Sources, Other Media	(148)		3		
Libraries					
Public, School, Church, NLS, & Other Libraries	(108)				3
U.S. Government					
Welfare, Social Security, Veterans Administration	(16)		*		*
Organizations/Clubs		(269)			7
Organization for the Handicapped	(217)		7		
Other	(52)		1		
Employer/Work	(67)				2
School/Training/Rehabilitation	(434)				12
Church	(30)				1
Health Services					
Physicians, Nurses, Hospitals, etc.	(201)				5
Community Social Services and Other	(90)				2
AFB Information Packet	(250)				7
		(3679)			100

Physicians, nurses, clinics, hospitals and other health services informed about 5%.

The agencies of the federal government are rather poor referral sources about the NLS. If we assume the respondents' memories are accurate regarding the sources from which they obtained information this is particularly unfortunate since a large proportion of respondents receive some sort of federal assistance from social security, disability benefits, food stamps, welfare programs, or through Medicare/Medicaid. One action that NLS might take to remedy this situation is to seek some cooperative arrengements with other federal and state agencies, whereby things like leaflets describing the service would be included along with the checks or food stamps that are regularly sent to recipients. It is clear that no single outreach approach will be successful for everyone. TV will catch the attention of some eligible persons or their families and leaflets may reach others.

Sources of Information about Special Services Used by NLS Users and Non-Users--In addition to asking questions about how the respondents first heard of the NLS program, we also asked more generally how the respondents found out about special legislation or local programs for physical probelms--e.g., a new health service or reduced fares on public transportation. The data show that current NLS subscribers and non-users utilize most sources of information about equally. The two exceptions to these learning patterns are: a) 95% of the non-users reported obtaining information from television, radio and other mass media, compared to about 84% of the NLS users; and b) twenty-one percent of the NLS users generally obtain information from organizations (including those of and for the handicapped), clubs and churches, compared to only 8% of the non-users. Non-users, it appears tend to rely more on lay referral systems and informal information networks. These two findings suggest that formal organizations have the potential to inform people about the NLS program for two reasons: first, because the persons who participate in them appear also to be persons who are interested in finding out about other programs they might participate in, and who would use the NLS program were they aware of it; and second, because the National Library Service is a part of the formal government social service system (i.e., the formal organization network), from which some people already obtain information, and obviously, from which many more might. (See Chapter 5 for further details on the sources of information used by the respondents to find out about special services.)

RELATIONSHIP OF AWARENESS AND USE OF THE NLS TO READING

Interest in Reading

The awareness and use of the NLS program must be gauged in terms of individual's interest in, and performance of, reading. It is unlikely that people who are not interested in reading will either seek out, or be receptive to, information about book and magazine lending services. Therefore, interest in reading is a natural starting point. Only once the interest in reading has been established does it make sense to speak about the awareness and use of the program.

NLS users are by and large more actively involved in reading than their non-user counterparts. Although they get slightly less help with reading than non-users, they discuss books more often, are much more accustomed to reading and using libraries, enjoy reading more, and read more both in terms of the incidence of reading and the regularity with which they read than non-users. A number of these characteristics are summarized in Table 7-3.

Table 7-3

Selected Characteristics of Reading Behavior for Current NLS Users and Non-Users

Reading Needs/Reading Behavior	NLS Users	Non-Users*
	-- Percent*** --	
Characteristics		
1. Read in Last Month	85	73
2. Enjoy Reading		
A Lot	(75)	㊿
A Little	15	24
Not Much	10	26
3. Level of Reading Activity		
Sporadic	24	42
Occasional	24	27
Regular	24	17
Avid	28	14
4. Materials Read*		
Newspapers Only Reader	2	15
Magazines Only Reader	2	1
Books Only Reader	9	9
Periodicals Only Reader	3	14
Books Plus Reader	(84)	(61)
5. Primary Way of Reading		
Someone Else Reads	13	21
Regular Print	⑪	(72)
Large Print	7	16
Recordings	(64)	②
Braille	6	**
6. Satisfaction With Amount of Reading Now As Compared to Before Onset		
Much Less	43	54
About the Same	23	21
More	33	25
7. Presently Reads More or Less Than Before Onset		
Less	70	74
About the Same	16	17
More	14	8
8. Length of Materials Read Now As Compared to Before Onset		
Shorter	49	65
Same Length	42	29
Longer	9	6
9. Gets Help		
Selecting Materials to Read	19	23
Writing Away for Things	21	28
Going to the Post Office to Send Things Off	18	40
Obtaining Materials	17	45
Making Recordings	29	8
Putting on Records and Cassettes	18	14
10. Discusses Books or Magazines	(78)	㊾
11. Is Accustomed to Using Libraries	(58)	㊲
12. Very or Somewhat Interested in Having Volunteers' Help	32	23
Weighted Sample Sizes for most factors are about:	(839)	(6369)

* Excludes non-media readers

** Less than 0.5%

*** Circled items are ones where there is a substantial difference--i.e., 20% or more--between groups.

Actual Reading--Does the NLS provide a service that is not otherwise available? Does it induce people to read more? Eighty-five percent of the NLS users read in the past month compared to 73% of the non-users. NLS subscribers were also about 15 percentage points more likely to be readers than non-users were for all age groups except the 45-64 year group, for which the likelihood was the same for both groups (see Figure 7-1). Though it is impossible to conclude with certainty that the NLS program induces people to read more from these findings because we do not know the initial extent of interest in reading among persons in both groups, it seems plausible that at least part of the 12% difference between the reading done in the past month by users verses non-users can be attributed to the fact that the NLS service makes it considerably easier for print-limited persons to read should they want to.

Pleasure Associated with Reading--Persons who enjoy reading as a leisure activity are more likely to be aware of the NLS and to be using it than those who do not. Only 34% of the persons who said that they like reading "a lot" were unaware of the program, compared to 48% who only enjoy reading "a little," and 55% who do not enjoy reading "much at all." Almost three times as many persons who reported that they enjoy reading "a lot" (one out of six persons) had actually used the NLS program, while only one out of 20 persons who reported that they do not enjoy reading much are currently using it (see Table 7-4).

Among the current NLS users, three out of four (75%) said that they enjoy reading a lot, compared to one out of two of the non-users. Only one out of ten users noted that they don't like reading much (see Table 7-3). Readers were also more likely to know of the NLS program than non-readers: 61% of the persons who had read in the past month

Figure 7-1

Reading Done in the Past Month Among NLS Subscribers and Non-Users Within Age Groups

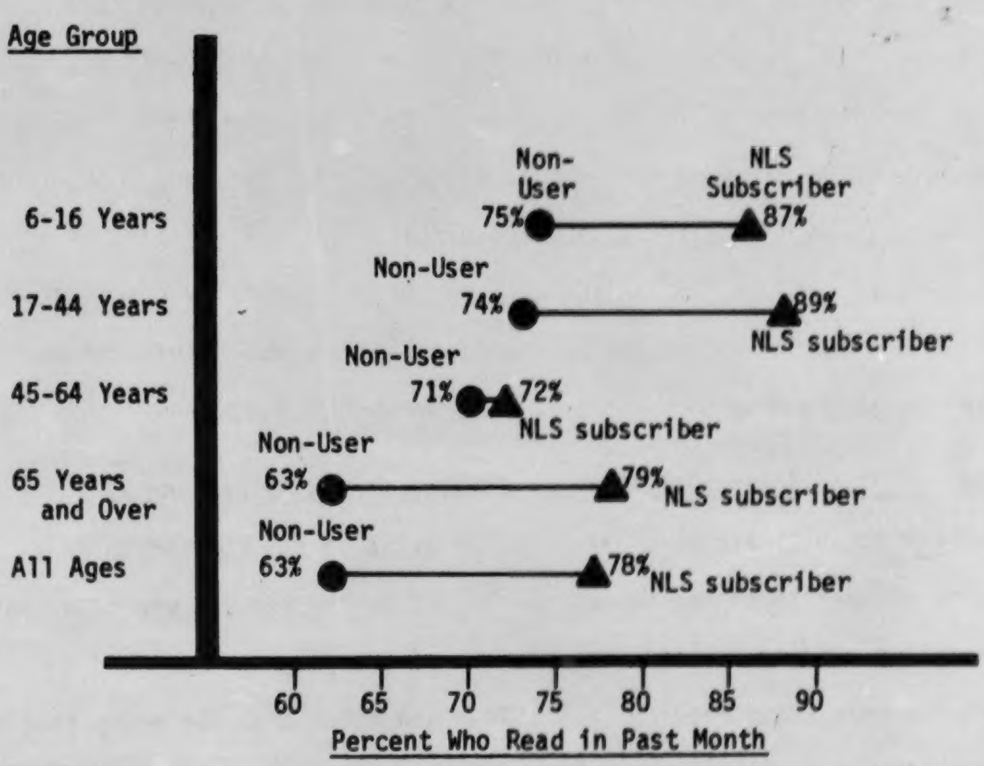

Table 7-4

Awareness and Utilization of the NLS Program By Selected Reading Characteristics

	Weighted Sample Size	Total	Never Heard of NLS	Heard of	Familiar With	Former User	Current User
		------	------	Percent	------	------	------
Enjoy Reading							
A Lot	(3727)	100	35	27	20	2	17
A Little	(1607)	100	48	23	18	3	8
Not Much	(1681)	100	55	23	15	3	5
Read in the Past Month							
Yes	(4985)	100	39	26	19	3	13
No	(1687)	100	54	23	14	2	7
Ways to Read Most Often							
Regular Print	(1863)	100	46	26	22	1	4
Person	(696)	100	43	24	14	5	14
Recorded Version	(532)	100	2	4	1	2	91
Large Print	(526)	100	41	28	21	1	10
Braille	(54)	100	*	8	*	10	83
Ways to Read Second Most Often **							
Regular Print	(300)	100	46	30	16	1	8
Person	(860)	100	32	20	16	2	30
Recorded Version	(307)	100	11	13	17	6	53
Large Print	(721)	100	42	23	19	2	14
Braille	(77)	100	**	**	3	11	86
Satisfaction with Amount of Reading Now As Compared to Before Onset							
Much Less	(3647)	100	45	25	17	2	9
Somewhat Less	(1482)	100	37	25	22	3	13
As Much	(461)	100	43	20	19	2	15
Presently Reads More or Less than Before							
Less	(3843)	100	44	25	19	2	10
About the Same	(1553)	100	47	23	20	1	9
More	(461)	100	40	23	21	2	16
Length of Materials							
Shorter Length	(3209)	100	45	24	20	3	8
Same Length	(1553)	100	40	26	20	1	14
Longer	(290)	100	46	21	17	*	16

* Less than 0.5%
** Excludes 1322 cases where no second most popular way to read was specified.

were aware of it, compared to 50% who had not read anything in the past month.

Level of Reading Activity--The amount of time spent reading or the level of reading activity is clearly associated with awareness of NLS: only 20% of the avid readers did not know about the Talking Book and Braille Program, compared to 32% of the regular readers, 36% of the occasional readers and 45% of the sporadic readers.* This bears out the proposition that readers will seek out print alternatives fitting their needs.

The time spent reading is also associated with subscription to the NLS program, in nearly the reverse proportions to lack of awareness: 43% of the avid readers were subscribers to NLS compared to 13% of the sporadic readers. Among the current NLS subscribers, there were as many light readers as heavy readers, but overall, the NLS subscribers are among the most active readers in the target population.

All Ways of Reading--It is clear from the respective media that the users and non-users of the NLS choose to read with, that the NLS users rely more upon other people and formal sources of print alternatives than do non-users. As seen in Figure 7-2, the non-users utilize regular print over four times as frequently as NLS subscribers, and large print over one and a half times as frequently. In contrast, NLS users utilize other persons to read to them about twice as often as non-users. Few

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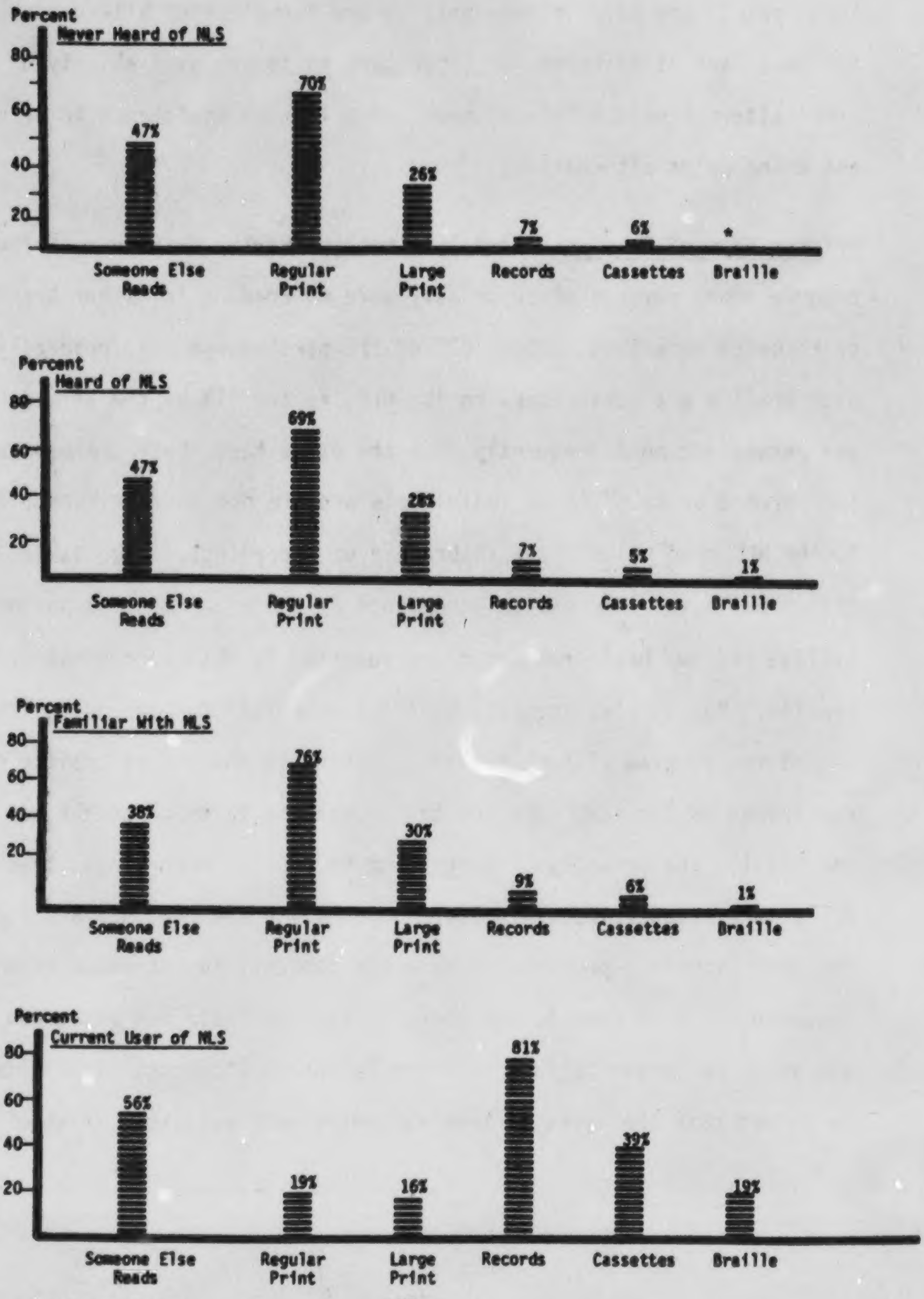
*The meanings of the terms "avid," "regular," "occasional" and "sporadic" reader are given in Chapter 6.

Figure 7-2

Ways of Reading by Awareness Levels



* Less than 0.5%.

of the non-users read by listening (about 10%) compared to near universal use of recordings by NLS subscribers, and almost none of the non-users (1%) read braille, compared to 19% of the NLS users. It is not possible to tell, however, whether the non-users' tendency to rely on regular or large print, and only infrequently to use formal print alternatives is due to a lack of awareness on their part as to the availability of print alternatives, a lack of need, or a lack of assistance in ordering and using print alternatives.

Primary Ways of Reading--There is almost universal awareness of the NLS program among persons whose primary mode of reading is either braille or recorded materials. About 83% of the persons who read primarily with braille are subscribers to the NLS, as are 91% of the persons who use recordings most frequently. On the other hand, only two percent or two percent or so of those individuals who are not current subscribers to the NLS read primarily with braille or recordings. (See Table 7-5.) This shows a very impressive acceptance of the program among persons who utilize the two basic reading modes supplied by NLS--recordings and braille. But it also suggests that the potential for expanding the use of the program without training persons in the use of braille or recordings is limited. The NLS has no mandate to teach people how to use braille and probably is unequipped to do so. Recordings, however, are a much simpler medium to learn to use, and the regional and subregional libraries probably do have the capacity to introduce tape recordings and records to non-users by tapping their own resources and volunteer organizations like the Telephone Pioneers. In Chapter 3 we showed that the cassette tape recorders were available in about

Table 7-5

Ways Used to Read Most Often by Awareness and Utilization of the NLS Program

	All Non-Users	Non-Users: Never Heard	Non-Users: Heard of	Non-Users: Familiar With	Non-Users: Former User	Current Users
	Percent					
Regular Print	62	62	59	65	44	10
Someone Else Reads	20	22	20	16	9	13
Recorded Versions	2	*	3	1	25	64
Large Print	17	16	18	18	11	7
Braille	*	*	*	*	11	6
Total	100	100	100	100	100	100
Weighted Sample Size	(2873)	(1383)	(824)	(622)	(44)	(755)

*Less than 0.5%.

4 % of the respondents' homes and 60% were physically able to operate them. Record players, in contrast, were available in 70% of the respondents' homes, and 75% could operate them.

About 55% of those persons who primarily read regular print, large print or have another person read to them are aware of the program, but a much lower proportion use the program. Forty percent of the persons whose primary reading mode is regular print use the NLS, compared to only 10% of the large print users, and 14% of those who are usually read to by another person are NLS subscribers. While these findings suggest that large print users are the least likely to use the NLS program, they do not reflect the fact that large print materials are not provided by many of the regional libraries. If, however, the NLS network libraries were to expand their large print collections, they might attract readers whose vision conditions are unstable, and might be interested in using talking books when they are no longer able to read large print.

Although the level of awareness and utilization of the program does not seem to be determined by the choice of a primary reading medium, it is nevertheless an important factor to consider. Sixty-three percent of the respondents who have not heard of the NLS read regular print most often, 22% have another person read to them and 16% read large print.

Among the current NLS subscribers, listening to recordings is the most popular way of reading for nearly two persons of three. Regular print and being read to by another person are most popular for about one subscriber in eight, and large print and braille are used most often by about one subscriber in sixteen (see Table 7-3).

Satisfaction with Reading--NLS users tend to be slightly more satisfied with the amount of reading they are presently doing than non-users, including those who never heard of the program, though none of the groups is very satisfied: 52% of those not aware of NLS are very unsatisfied with their present level of reading, as are 39% of the current subscribers. One possible implication of this is that there is much room for enhancing the NLS program both to attract new readers and to increase the level of satisfaction of the present subscribers. Another way of interpreting this finding, however, is that many people feel that they might be doing more reading than they are presently doing, given the time available for it (see Table 7-4). It is not clear, in other words, whether the respondents' dissatisfaction with the amount of reading they are doing stems from inadequacies in the program, or simply from the fact that the respondents, perhaps like many persons in the general population, wish they read more.

Although 30% of NLS subscribers are reading the same amount or more than before the onset of their limitation, 70% are reading less, compared to 74% of all respondents, including non-users. The non-users tend to read pieces of a shorter length more than NLS subscribers, but half of the subscribers are also reading shorter pieces now than before the onset of their limitations.

Experience in Reading--Fifty-eight percent of the NLS users were accustomed to using libraries before the onset of their reading limitations, compared to 37% of the non-users. NLS users also tend to discuss things they have read with friends and family more frequently (78%) than non-users (49%).

But, although persons who were accustomed to using libraries and discussing books and magazines prior to the onset of their limitation were substantially more aware of the NLS program than persons who were not so accustomed, experience in reading was not strongly associated with interest in becoming a subscriber: only one person in six among the experienced readers had become a subscriber to the NLS.

Interest in Volunteers--Awareness of the NLS program was highest among persons who are very interested in having volunteers read to them and provide other help, and declined with the decreasing levels of interest in volunteers. But, as with experience in reading, interest in volunteers was not strongly associated with subscription to the NLS: 32% of the NLS users are very or somewhat interested in having volunteers visit them, compared to 23% of the non-users. These findings suggest that the interest in volunteers and the interest in reading services in general are not interchangeable; a person may use volunteer readers for some purposes and the NLS program for other purposes, or they may just use one or the other. Volunteer readers and formal reading services are best seen as complements of one another, not as substitutes.

Gets Help--Our findings in Chapter 6 showed an erratic relationship between getting help and the overall amount of time spent reading. This finding persists when the data are examined for users and non-users of the NLS. However, users of the NLS with multiple limitations who get help do read more than those who do not get help.

FACTORS ASSOCIATED WITH AWARENESS AND USE

What are the social characteristics of the 300,000 persons in the household population who used the NLS program during 1977? What factors distinguish users from non-users? The points presented in Tables 7-6 and 7-7 and Figure 7-3 serve as a summary of, and an introduction to these issues.

Table 7-6

Selected Social and Demographic Characteristics of Current NLS Users and Non-Users

Predisposing Factors	NLS Users*	Non-Users
	-- Percent --	
Age		
6-16 years	8	12
17-44 years	23	15
45-64 years	26	26
65 years and over	44	48
Sex		
Women	55	60
Enabling Factors		
Race		
White	91	79
Highest Grade of School Attended		
0-8 years	23	47
9-12 years	40	36
13 or more years	37	18
Household Income		
Less than $5,000	39	50
$5,000 - $9,999	29	23
$10,000 - $14,999	14	12
$15,000 or more	18	6
Usual Life Role		
Going to School	18	14
Taking Care of Home	7	9
Working	10	13
Retired	36	41
Not Looking for a Job-- mostly for reasons or health or disability	24	18
Looking for a Job	4	5
Living Conditions		
Living Together	79	77

* Weighted Sample Sizes for most factors are: NLS Users (829); NLS Non-Users (6369).

539

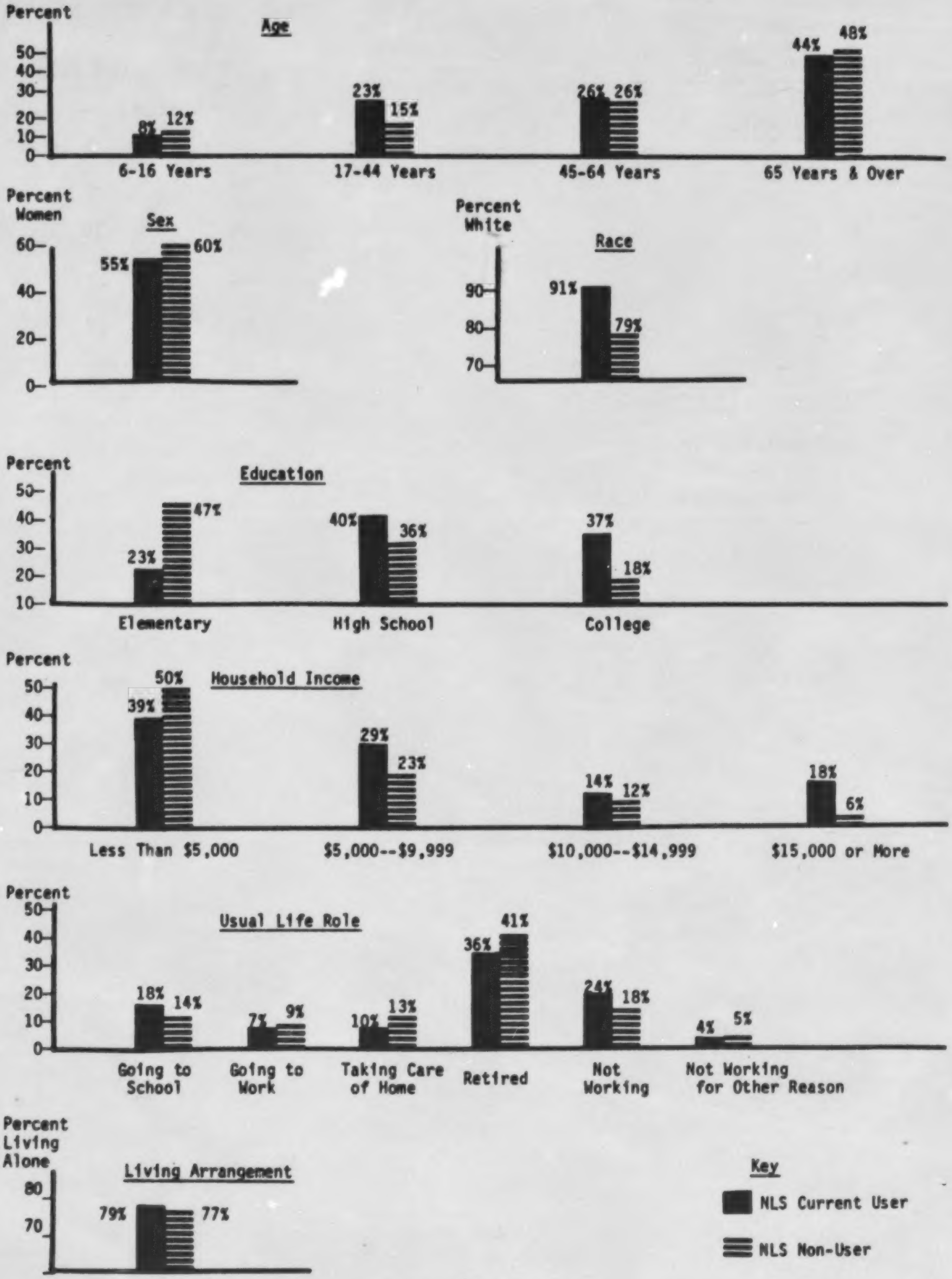
Table 7-7

Selected Community Characteristics of NLS Users and Non-Users

Community Characteristics	NLS User	Non-User
	-- Percent --	
Census Region		
Northeast	25	17
South	28	39
North Central	29	29
West	18	14
Place of Residence		
Metropolitan Areas	75	66
Non-Metropolitan Areas	25	34

Figure 7-3

Selected Social and Demographic
Characteristics of Current NLS Users and Non-Users



Predisposing Factors

Age--An analysis of awareness by age shows the use made by the respondents and their families of both lay referral sources and formal information networks. As we have seen, age is a primary determinant of social role (Chapter 4) and activity (Chapter 5), and by itself, is a fairly strong predictor of awareness and use of the NLS program. This is seen in Figures 7-3 and 7-4 and in Table 7-8. Parents of school age persons and older persons are about equally aware of the NLS (53%), reflecting a similar access to information in the non-working age groups. However, awareness is nearly ten percentage points higher in the working ages (17-64), as is use: 23% of the NLS users are in the age group 17-64 years, compared to 15% of the non-users. Slightly more than one out of five (22%) persons in the age group 17-44 had tried the NLS program, and nearly three-quarters of those persons are still using it.

Use among the school age group was slightly less than one out of twelve persons (8%) and use among the 65 years and over group was one out of nine persons (11%). The lower awareness in the younger and older groups may reflect the greater difficulty in reaching these populations. And conversely, the higher awareness among working age persons may reflect the input of state vocational rehabilitation (VR) officers, who are concerned with certifying people with a disability status and arranging for appropriate social services and financial assistance for persons who have employment potential.

Figure 7-4

Awareness and Use of the NLS by Age

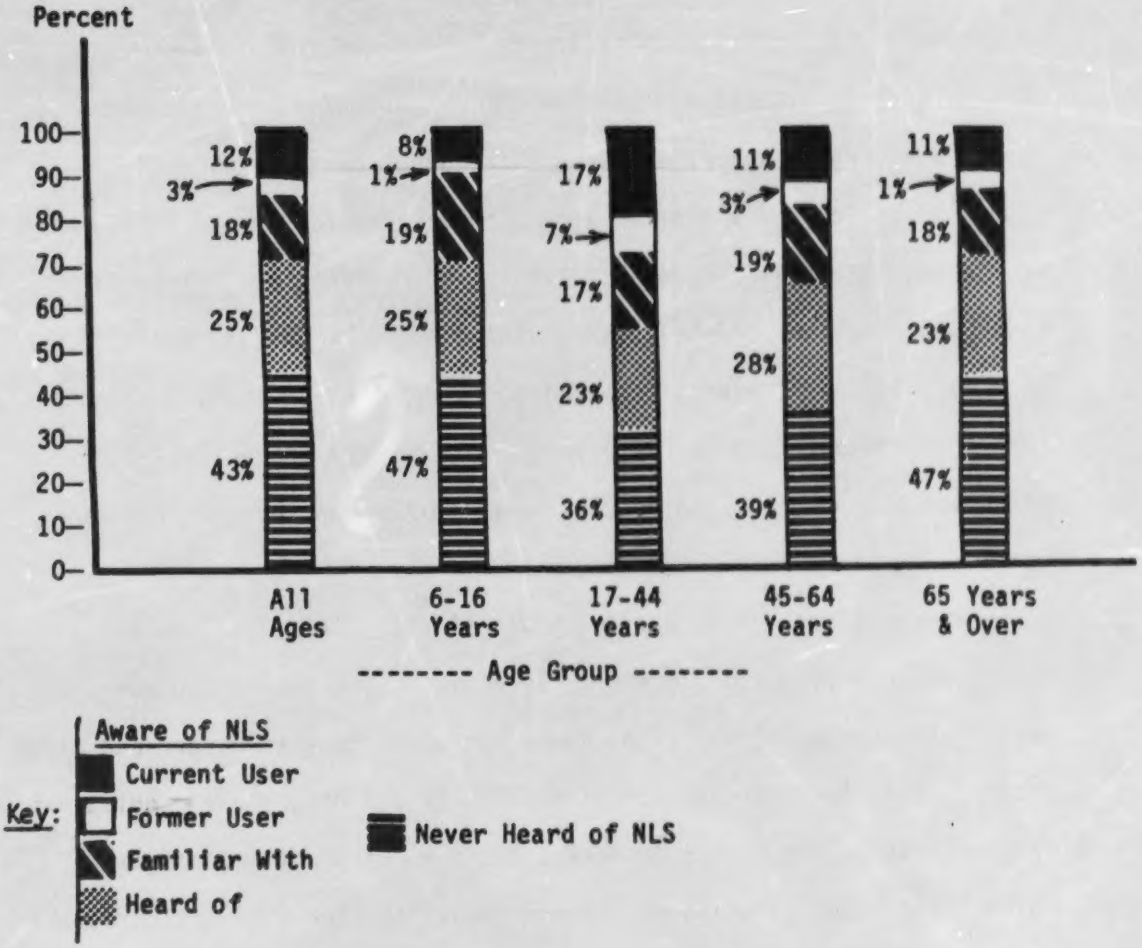


Table 7- 8

Awareness and Use by Age

			Non-User					
Age	**Weighted Sample Size**	**Total**	**All**	**Never Heard of LC**	**Heard of LC**	**Familiar With LC**	**Former User**	**Current User**
		Percent						
6-16								
Male	(491)	100	93	47	27	20	*	7
Female	(292)	100	90	47	21	18	3	10
All	(783)	100	92	47	24	19	1	8
17-44								
Male	(617)	100	85	41	17	19	8	15
Female	(508)	100	80	30	31	15	5	20
All	(1125)	100	83	36	23	17	7	17
45-64								
Male	(693)	100	83	33	33	15	3	17
Female	(1188)	100	91	43	25	21	3	9
All	(1881)	100	89	39	28	19	3	11
65 and Over								
Male	(1070)	100	87	47	19	19	2	13
Female	(2284)	100	90	47	25	18	1	10
All	(3354)	100	89	47	23	18	1	11
Total	(7198)	100	88	43	25	18	3	12

* Less than 0.5%.

Interestingly, when older persons do try the program they are more likely to continue using it than persons in other age groups: only 11% of respondents 65 and over who started the NLS program were not using it currently, compared to a 20% attrition rate for the age group 45-64, a 28% rate for the 17-44 age group, and a 14% rate for the 6-16 year old group. There are two possible explanations for the lower dropout rates among the elderly: the first is that they have fewer reading options than working age persons and so content themselves with what is available; and the second, which is perhaps just the opposite side of the coin, is that they have reached a stage in life where the NLS program meets their reading needs more fully than it does those of younger, more active persons. This seems plausible because, as we shall see, the NLS program quite adequately provides most print-limited persons with leisure reading materials, though it is somewhat less responsive to needs for more specialized content. Similarly, younger persons may also have fewer reading options, as well as less of a need for specialized (informational) reading materials.

One clear implication of these data for the NLS is that outreach activities targeted to the elderly, especially those who have left the mainstream of school and work life, are likely to be more effective in making permanent subscribers once persons become convinced of the value of using print alternatives, than activities directed to the other age groups. Another implication is that more intensive outreach activities may be necessary to reach younger persons who potentially have an entire lifetime before them in which to make use of the program.

It is surprising that our public schools are not doing a better job of identifying persons with reading limitations and apprising parents of programs that may be of help. This may in part be a function of the fact that younger persons are more prone to learning disabilities, many of which, like dyslexia, may be outgrown, thus rendering the long term use of the NLS program unnecessary. On the other hand, though, the frequency of multiple reading limitations of different types was nearly as high for the youngest age group as it was for the elderly, suggesting that the program may still have broad applicability among school age children.

Uncertainty about the eligibility of persons with learning disabilities may also be reflected in the data, since teachers may simply not bother to inform parents of the NLS program if they feel either that the existence of a reading limitation resulting from an "organic dysfunction" could not easily be established, or that they do not want to frighten parents with the information that their children need print alternatives. Further, teachers and school officials may view acceptance of the need for print alternatives among mainstreamed school children as a failure on their part. Of course, the simplest explanation, that teachers do not know of the NLS program themselves, may hold as well. Most likely the explanation for the low degree of awareness among parents of school children is a combination of all of these factors and others as well.

It was also somewhat troubling to find that the awareness among older persons is so low: nearly one-half do not know about the NLS program, despite the fact that half of this group, indeed nearly half of the entire sample, had visited a physician or received medical treatment within the prior month, and many are receiving federal financial assistance. Anecdotal knowledge is that ophthalmologists and optometrists take relatively little interest in rehabilitation activities that might benefit their visually impaired patients. Our data suggest more broadly that the medical establishment either has little awareness of the National Library Service or does little to communicate it to their patients. This is unfortunate since so many potential NLS users are in contact with a physician or health care facility. It would seem that an especially good and manageable target for NLS outreach activities is the health care and medical professionals.*

Sex--There are no consistent patterns in the data by sex overall or when the data are controlled for age. The overall patterns are seen in Table 7-8. In some age groups men are more knowledgeable than women, while in other age groups women are more aware. The differences are about 10% in the working ages: in the age group 17-44 years, 41% of the men have "Never Heard" of the NLS compared to 30% of the women; whereas in the age group 45-64 years the situation is just reversed--43% of the women have "Never Heard" while only 33% of the men have "Never Heard." We have no evidence regarding these findings but suspect this has something to do with the greater emphasis of young working age males to connect to the state vocational rehabilitation services in their efforts to find employment. Overall 55% of the NLS users are women compared to 60% of the non-users.

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*Names and addresses of such professionals may be purchased inexpensively from commercial mailing list firms.

Enabling Factors

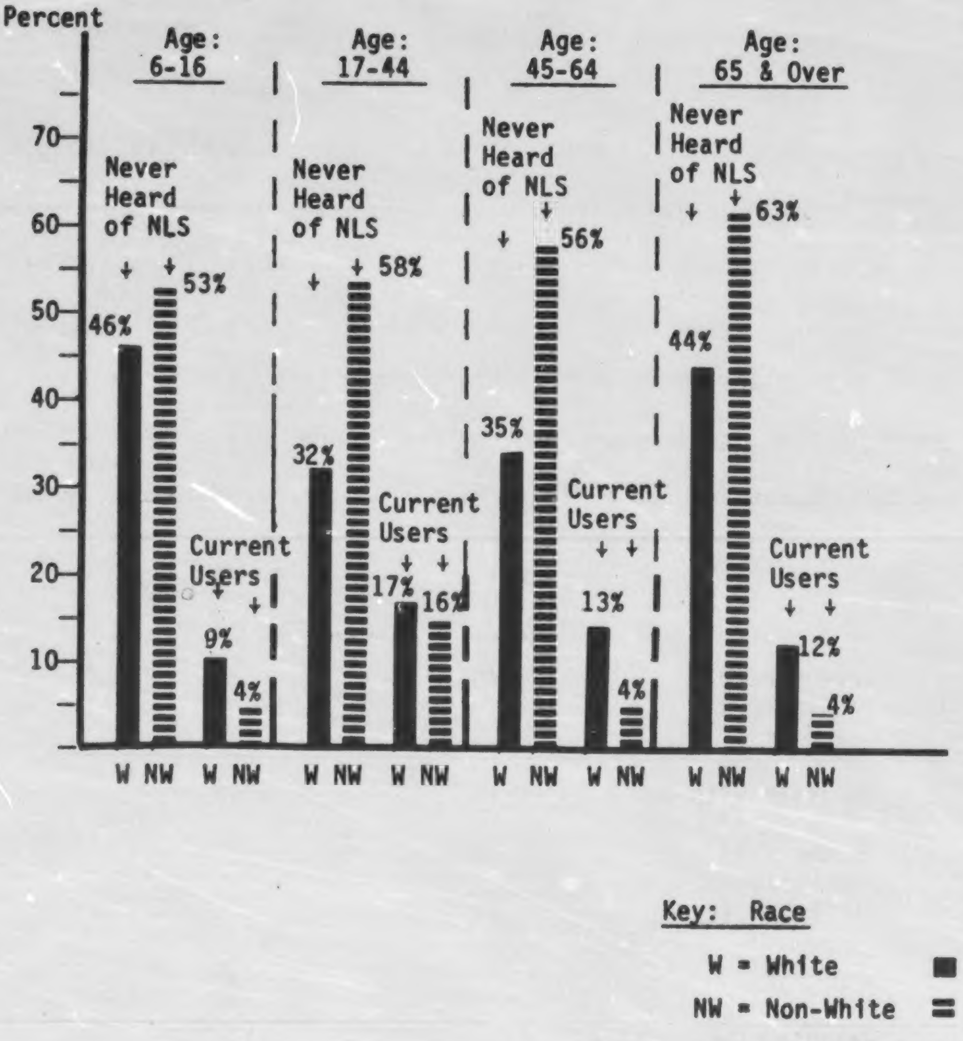
Race--Race is a significant determinant of awareness and use. The data given below and in Figure 7-5 show clearly the failure of our social system to integrate racial minorities or non-whites (NW) and whites (W). Only among school age children and their parents do the awareness levels of the two groups about the NLS approach one another: W-54% to NW-47%. Awareness of the NLS is about one and a half times higher among white adults than among non-white adults (W-56% to 70%; NW-40% to 45%). And only in the age group 17-44 is utilization nearly comparable (17% to 16%), suggesting that the potential demand for the service among non-whites is relatively high, since only half as many are aware in this age group. In other age groups, use by whites is two to three times as high as it is by non-whites (W-9% to 13%; NW-4%).

	White		Non Whites
	-----	Percent	-----
Never Heard	40		59
Heard Of	25		21
Familiar With	19		13
Former User	3		1
Current User	13		6
Total	101		100
Weighted Sample Size	(5817)		(1201)

Overall 91% of NLS users are white, compared to 79% of the non-users. These data point up the vast potential for expanding the NLS service to racial minority populations. Special outreach

Figure 7-5

Awareness and Use of the NLS by Race



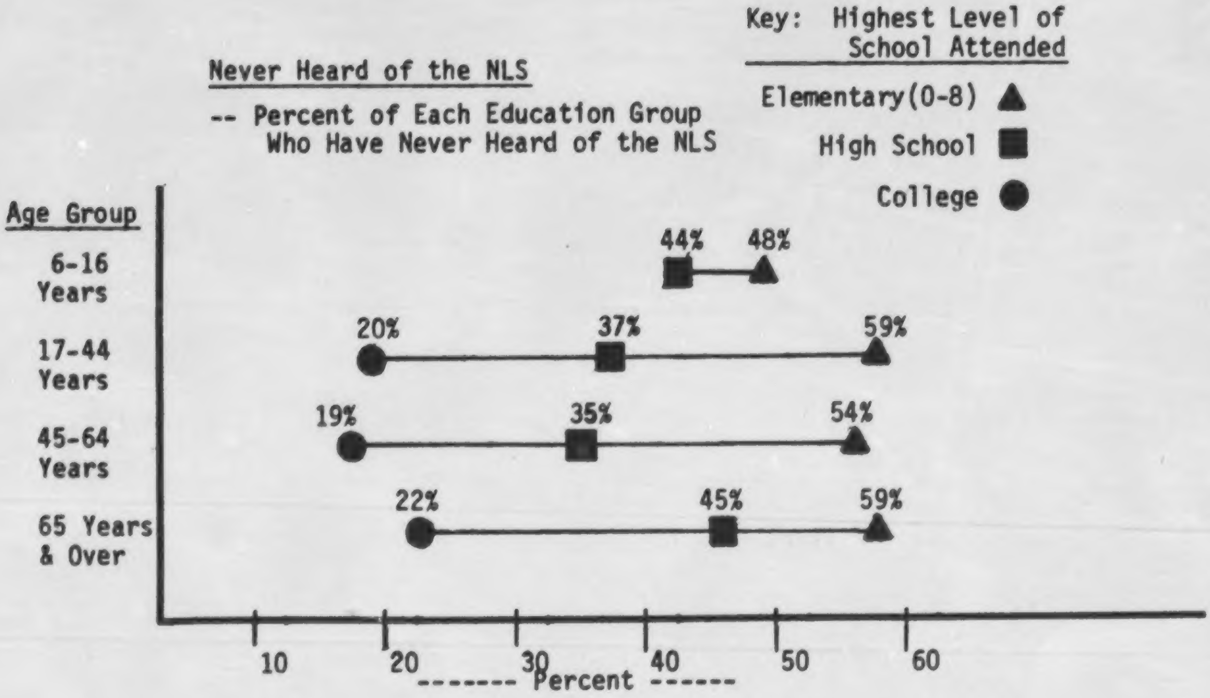
efforts may be required since older non-whites are not well integrated in the mainstream of American society and many young non-whites curtail their education sooner than whites do: while the same proportion of non-whites have attended high school as whites, non-whites have been to college only half as often.

Education--Formal schooling is a key enabling variable and, as we saw in Chapter 6, the primary determinant of reading behavior. The association between education and awareness or use of the NLS is also very strong. When the data are controlled for age, education is the strongest predictor of awareness and use of all the enabling variables. For each age group, both awareness and use increase with the number of years of schooling. This is seen in Figure 7-6. In general, awareness increases from about 40%-50% for persons with an elementary school education, to about 55%-65% for persons who have attended high school, to 75%-80% for college attendees. Use increases from 5%-7% among persons with an elementary education, to 12%-15% for persons with a high school education, to over 20% for those with a college education.

The proportion of college attendees among the NLS users is twice that of the non-users, whereas the proportion of NLS non-users with only an elementary school education is twice that of the NLS users. It is clear, then, that the NLS users are more highly educated than the non-users. This fact is a very critical one, and forcefully points up the vast potential of the NLS to attract new readers by providing reading materials geared to lower educational and reading levels. (As a way of double-checking this hypothesis,

Figure 7-6

Awareness and Use of the NLS by Education Within Age Groups

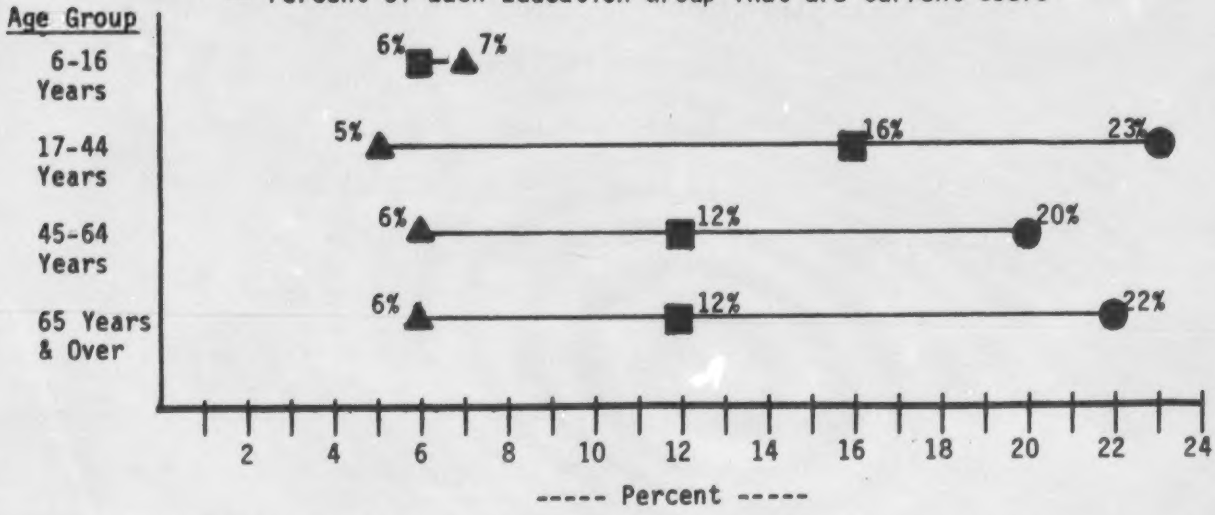


Never Heard of the NLS

-- Percent of Each Education Group Who Have Never Heard of the NLS

Current Users of the NLS

-- Percent of Each Education Group That are Current Users*



* To get the proportion of Non-Users, take 100% -% Current Users.

the NLS may wish to examine whether the reading level of most of its selections tends to exclude the non-users.

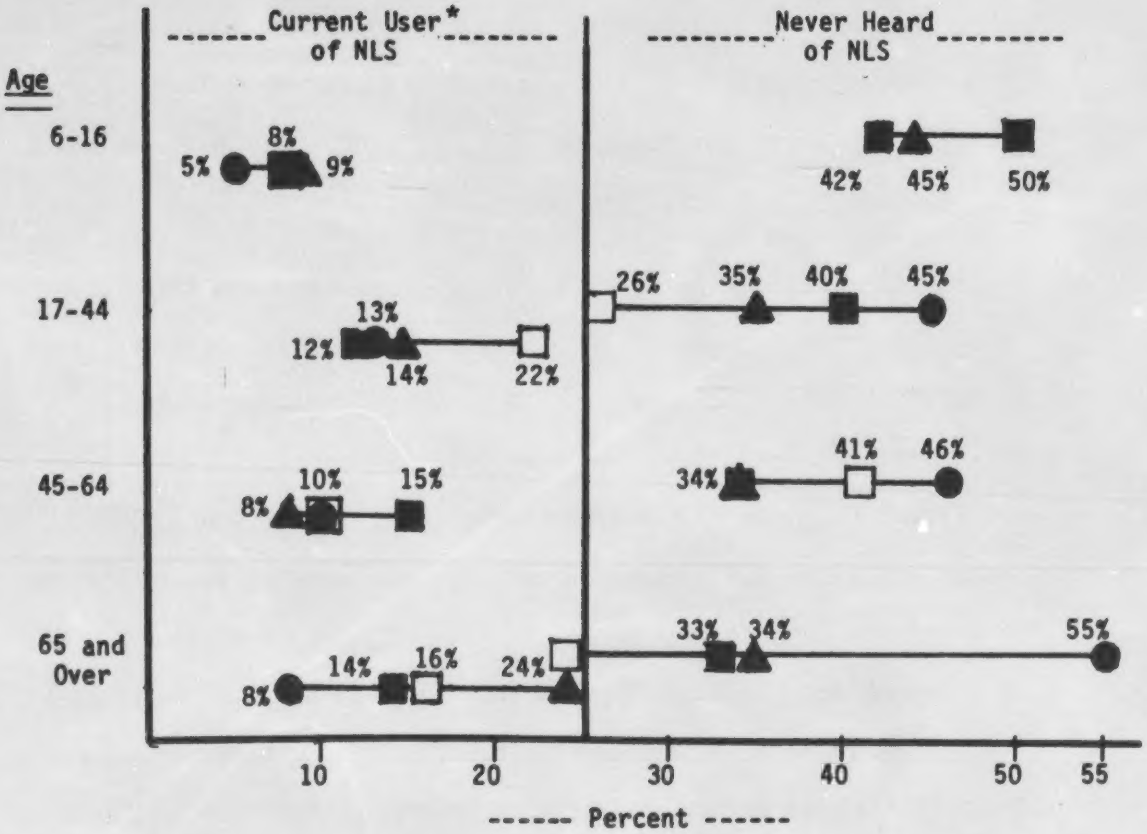
As we noted previously, 25% of the respondents said that they were reading shorter selections, and materials written in simpler language after the onset of their reading limitations. This again suggests that there is a demand for high interest/low vocabulary level reading materials, which is not being met as fully as it might be. (We will return to this point again in Chapter 8.)

Income--In assessing the impact of income, it is important to keep in mind that the NLS program is a free service. Free public services, as we discussed in Chapter 1, can be viewed either positively as entitlements, or negatively as a necessary evil (i.e., as charity).

Figure 7-7 shows that awareness increases regularly with increases in household income for all age groups. Utilization of the program, however, increases only very slightly, if at all, with income, and among persons 65 years and over, use actually declines for households with incomes above $15,000. This curious phenomenon suggests that for persons with higher incomes, other alternatives to recordings and braille are used more often. Possibly, families of these older persons can afford readers, or perhaps there is somebody else who has been hired to do household chores and to help take care of an elderly family member. The data may also reflect a perception on the part of these more affluent families that the NLS program is welfare or charity and so is not for them, or they may simply be reluctant to accept public services.

Figure 7-7

Awareness and Utilization of the NLS by Household Income Within Age Groups



Key: Income

● Under $5,000
■ $5,000 - $9,999
▲ $10,000 - $14,999
☐ $15,000 - & Over

* To obtain the proportion of non-users, take 100%- % Current Users.

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We begin to get some suggestion that other alternatives may be available or that a public service stigma may be felt by the 45-64 year old group, when we observe that use of the NLS declines among persons in this age group residing in households with incomes over $10,000. The group that is familiar with the NLS program increases modestly but regularly with income, while the group that has just become aware of the program increases in a more erratic way. We show this for the age group 45-64 years.

Possibly reflecting their higher educational levels and ages, NLS subscribers are more affluent than are non-users. For example, only 30% of the NLS users have household incomes of less than $5,000, compared to 50% of the non-users.

Usual Social Role--In Chapter 5 we showed that persons in the most active social roles (going to school, working, taking care of a home) tend to have the most active leisure styles as well. Since the NLS provides primarily recreational reading, this finding appears to be a useful guide to what sort of reading materials subscribers might be interested in. In Chapter 6, however, we found that the amount of informational reading associated with active leisure pastimes that was done was balanced by the reading done by persons who read for pleasure and vicarious experience. Our findings regarding awareness and use of the NLS by persons in different primary social roles reflect all of the above factors.* (See Figure 7-8.)

Persons who are working or looking for work, or adults who are

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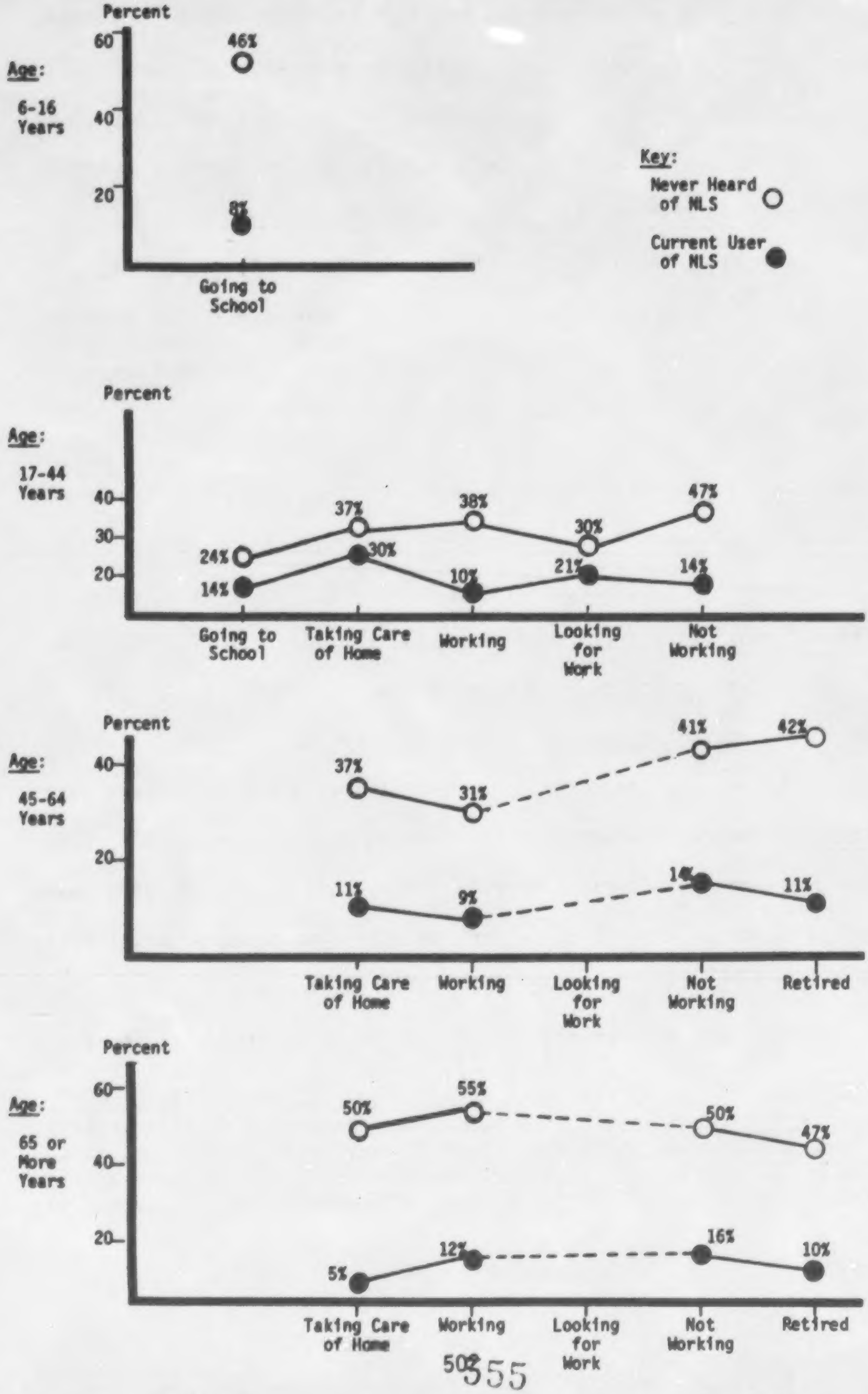
*The social roles of NLS users do not differ much from those of non-users; consequently, the information presented in this section does not focus on the social roles of users versus non-users, but rather on the social roles in which people are likely to be aware of, and make use of the NLS program and those in which they are not.

Figure 7-8

Awareness and Use of the NLS Program by Primary Social Role



going to school are more likely to be aware of the NLS program than persons in less active social roles. But persons with more free time are somewhat more likely to be users than persons with such active lives that they have no time for sheer leisure reading, showing the effect of the program's concentration on recreational reading.

Reading, however, as we have shown previously, is an important leisure time activity of professionals, whether they have print limitations or not. Hence, we also found that persons with print limitations who are employed in professional, managerial or teaching positions were extremely likely to be aware of the NLS (see below). Nine out of ten persons in this group (87%) were aware of the NLS, though only one out of five persons (21%) used the program. White collar workers in sales and clerical positions tended to know of the program to a somewhat lesser extent, and to use it to a much lesser extent than professionals. And the large group of persons employed in blue collar jobs were no more likely to know of the program than were unemployed persons, and were slightly less likely to use it.

OCCUPATION	Weighted Sample Size	Aware of NLS	Use NLS
		-----percent-----	
White Collar			
Professionals, Technical, Teathers, Managers, Administrators	(202)	87	21
Sales & Clerical	(207)	71	9
Blue Collar			
Crafts & Operatives, Laborers, Service	(478)	55	6

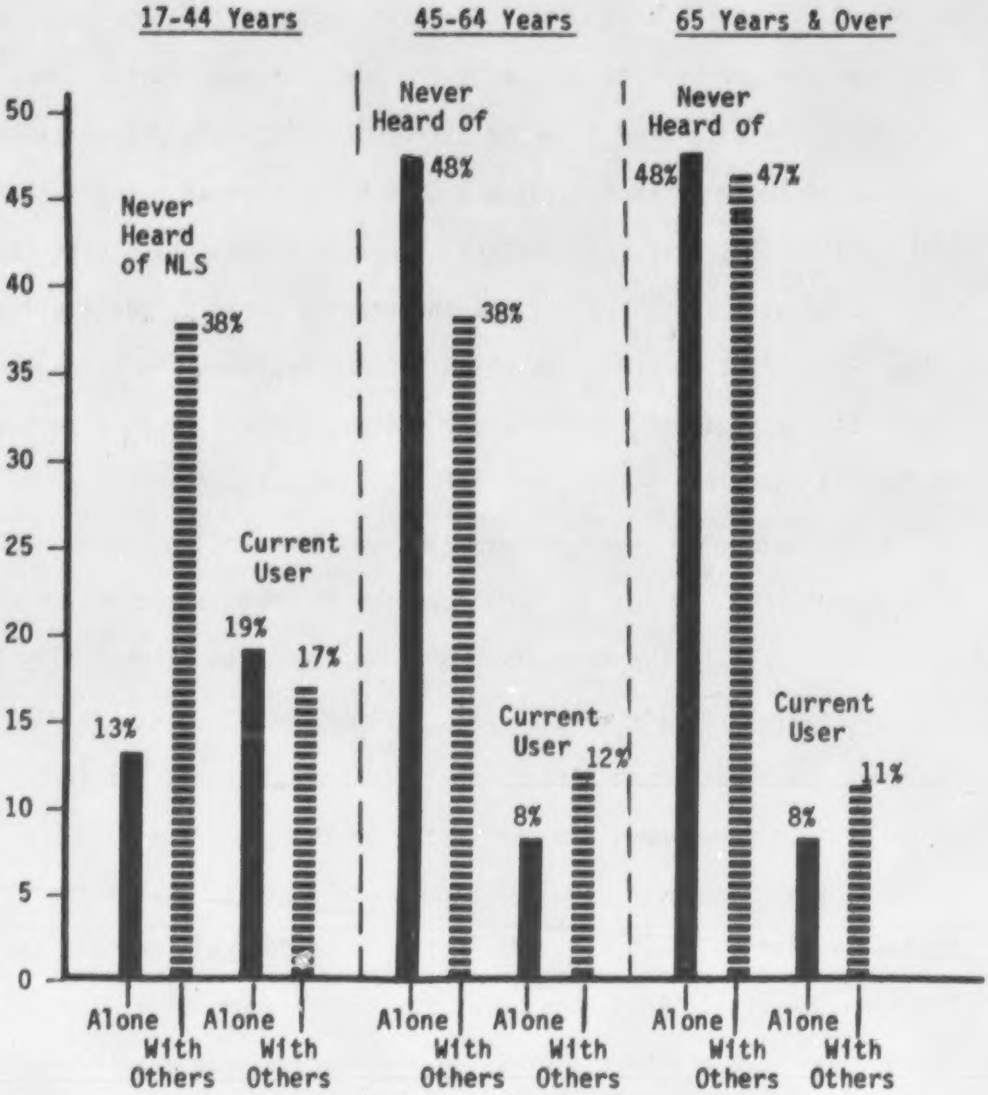
Living Situation--In Chapter 6 we saw that having other people in the home was an important enabling factor for reading. Living with others is also associated with a slightly higher use of the NLS program among persons 45 years and over, as seen in Figure 7-9. About eight percent of the persons 45 and over who live alone are users, compared to 11%-12% who live with others--suggesting the need for, or effect of getting help in using print alternatives after middle age. Living with others also increased the likelihood of becoming aware of the program somewhat among persons 45-64 years, but the effect does not show up at all for persons 65 years and over. Among young adults (17-44 years), persons who live alone are more likely to know of the NLS program than persons living with others, but those who do become aware of it are less likely to use it: 87% of those who live alone are aware but only 19% use the program, compared to 62% who live with others who are aware and 17% who use it. These data again reinforce the need among the most severely disabled (often the oldest persons) to have help in order to use the NLS program.

Community and Organizational Factors

Regional Variations--The findings by region and place of residence point to both some of the strengths and some of the weaknesses of the American system, in which services are established at the federal level and responsibilities to organize and distribute those services are reserved for state and local governments.

Figure 7-9

Awareness and Use by Living Situation



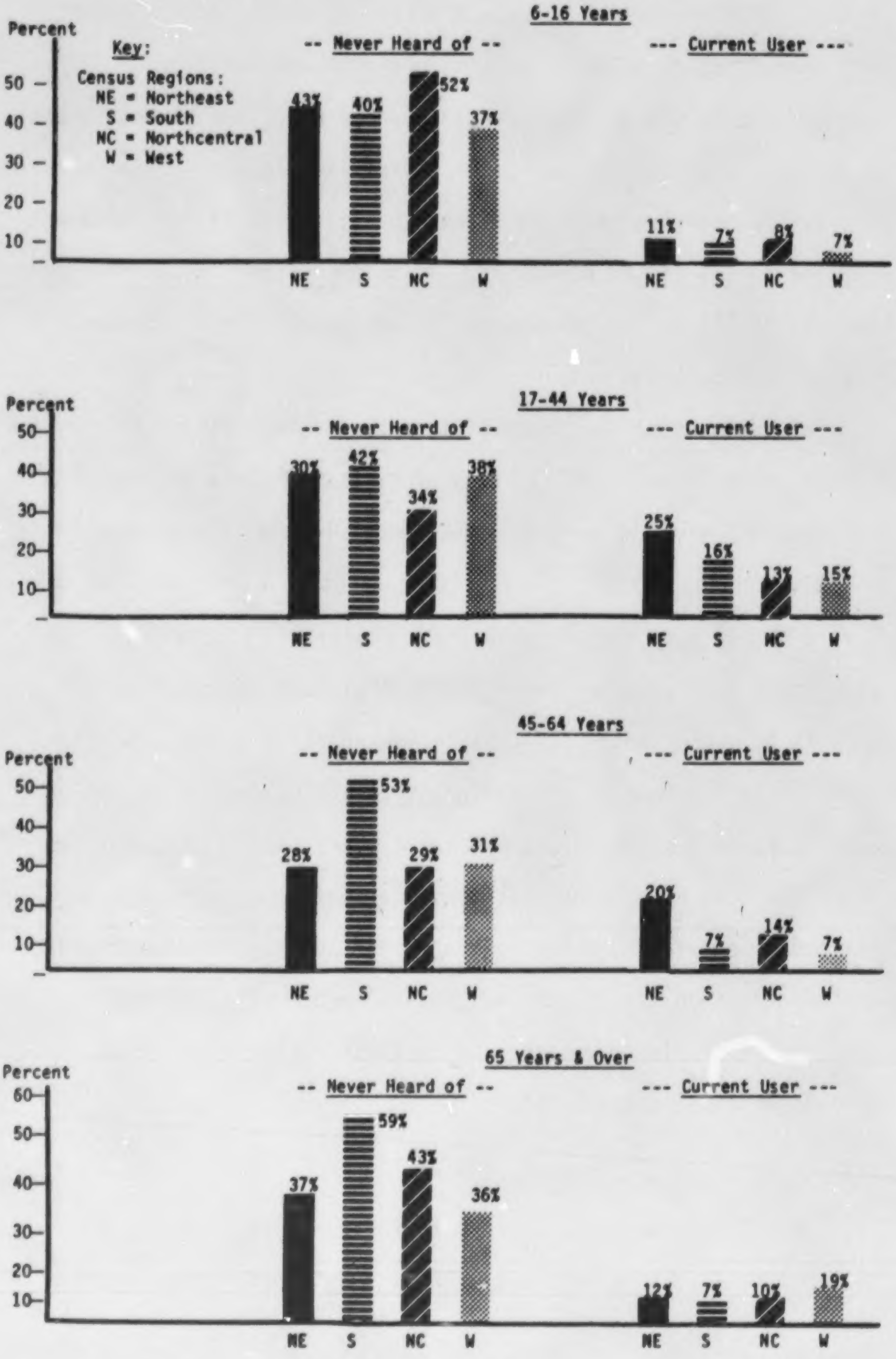
Awareness and use of the NLS are comparable across regions in the age group 6-16 years. Roughly 50%-55% of the respondents in these ages knew of the NLS in regions except the West, and 7%-11% were users. (See Figure 7-10.) Awareness is a bit higher in the West (63%), but use is about the same (7%). The similarity of the outcomes for this age group appears to be due to the public school system, because for adults the situation is quite different. Substantial variations by state in their awareness and use of the NLS program suggest that individual states have very different ways of distributing services to disabled persons generally, and the reading services particularly. (Volume 4 describes the ways in which the NLS regional and subregional libraries are organized in different states, their different levels of funding and staffing and the different services offered.)

Notwithstanding these differences, we were still somewhat surprised to see that they had such an impact on the findings about awareness and use. People in the northeastern and western states generally have the highest levels of awareness, though in all Census regions awareness declines among persons age 65 years and over. There is a pattern of low awareness and use in the South. To illustrate, in the age group 65 years and over, the NLS program is known of by 63% in the Northeast, 41% in the South, 57% in the North Central, and 64% in the West. Overall, then, the South is least aware: 54% of our respondents from southern states had not heard of the NLS, compared to 34% of the respondents from western and northeastern states.

As we have shown, utilization of print alternatives, special services and reading levels generally vary across states for all sorts of

Figure 7-10

Awareness and Utilization of the NLS by Region



reasons that relate more to the educational, social and cultural factors, and to belief systems than to the community and organizational factors. So wide differences in the use of the NLS are, therefore, to be expected from region to region.

Persons in the northeastern states are among the highest users of the NLS, although use among the elderly is highest in the western states. Twenty-five percent of the NLS users live in the Northeast compared to 17% of the non-users; 18% of the users live in the West compared to 14% of the non-users; 29% of the users and non-users live in the North Central.

One implication for the NLS might be to adopt standards for outreach activities in all states, or to set up state by state plans which hopefully would result in more equal levels of awareness of the NLS program. (This point is also addressed in the 1978 ALA guidelines).

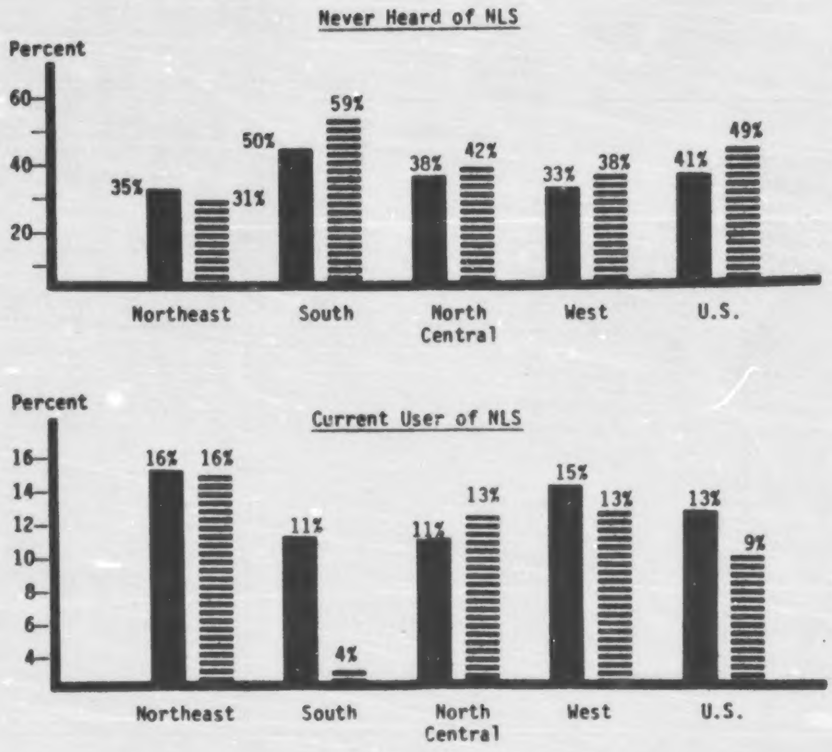
Metropolitan Variations--Awareness of the NLS is five to ten percentage points higher among adults living in metropolitan areas than it is among those living in non-metropolitan areas, when age is controlled. Despite the different levels of awareness, use among persons 6-16 years old and 17-44 years old is at nearly the same level in both areas. In the older age group, use in non-metropolitan areas is about half as great as it is in metropolitan areas, reflecting the differing levels of awareness, and factors such as life style, education and availability of social resources. (See Figures 7-11a and 7-11b.)

Attitudes of the Respondents

Are persons who have lived with their reading limitations for a long time more knowledgeable about the NLS than persons who have

Figure 7-11a

a. Awareness and Utilization of the NLS Inside and Outside the Metropolitan Areas by Region



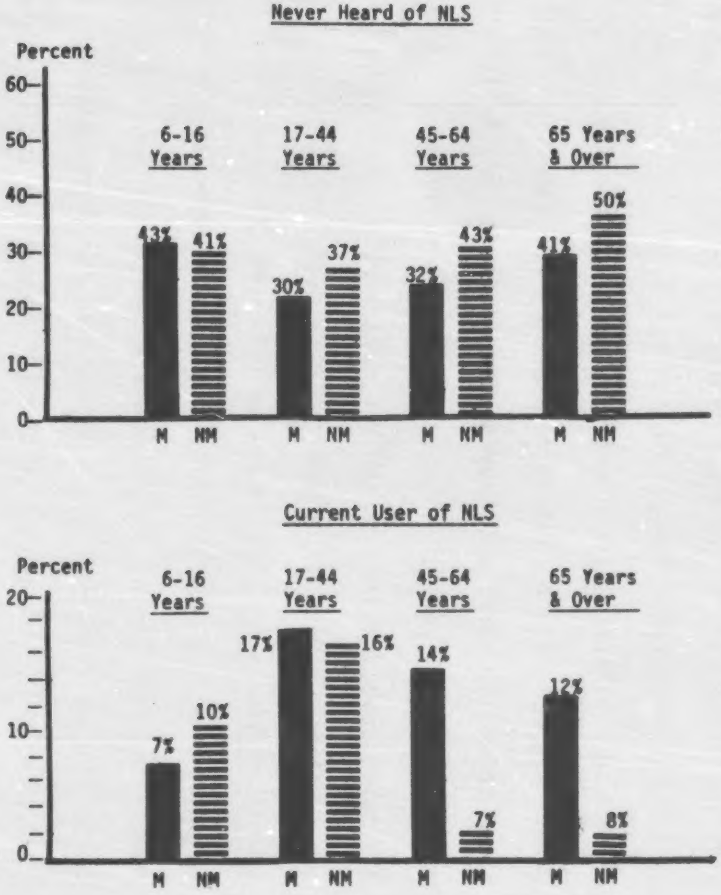
Key:

(SMSA) Metropolitan Area = M = ■

Non-Metropolitan Area = NM = ☰

Figure 7-11b

b. Awareness and Utilization of the NLS Inside and Outside Metropolitan Areas by Age



developed reading limitations relatively recently? Does awareness of the NLS vary depending on whether the disability occurs during childhood or after a life of work? How effective are national and community information sources at reaching out and informing people about community services? How do the attitudes and belief systems of persons with print limitations and their families affect their attitudes toward awareness and use of the NLS? The survey provided some rather surprising answers to these questions.

Length of Time with Limitation--We estimate that the annual incidence of persons with new print limitations being added to the NLS target population each year is approximately 100,000 persons.* Of these, about 38% become aware of the NLS within the first year or so of the onset of their limitation and 12% become users of the program.

Awareness and use vary slightly with the stage of life of the person, as shown below.

Awareness and Use of the NLS Among Persons Reporting the Onset of Print Limitations Within the Past Year

	Stage of Life				
	School Age	Early Working Age	Later Working Age	Retirement	All Ages
	(Age 6-16)	(17-44)	(45-64)	(65 years +)	
Never Heard of	50	42	36	39	38
Current User	18	10	18	9	12
Weighted Sample Size	(44)	(61)	(167)	(288)	(562)

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*This estimate was arrived at by comparing answers to the question of the age at onset of the reading limitation to answers to the question of current age. Approximately 200,000 persons reported that their age at onset was either the same as their current age, or one year less than their current age. We have conservatively estimated the annual incidence at 100,000 to allow for the disparity between the persons who seem to have contracted the limitation a year ago, who may have just had a birthday and therefore only contracted it a week ago, and the person who in fact contracted the limitation a year ago.

Persons who have had their limitations for a longer time do not seem to be much more likely to become aware of the NLS or to use it. That is, we do not see growth in the percentage of persons aware of the NLS according to the length of time a person has had a print limitation.* This is seen in Figure 7-12. When we control for the stage in life in which the onset of the reading disability occurs, as in Figure 7-13, the same conclusion is reached. An individual who has lived with a print limitation for ten years is not much more likely to know about the NLS than a person who has lived with it only for five years. Increased awareness is likely to occur during the first five years after onset: thereafter, the proportion of persons who have Never Heard of the NLS remains relatively stable for persons who have suffered onset during different stages of their lives. For persons who developed limitations before age six years, the Never Heard group does not increase in magnitude over time at all. If anything, the data show that the respondents may have "forgotten" about the NLS program over time.

This is a surprising finding and is significant for the NLS since it reminds us how important it is that potential referral sources are fully aware of the components of the NLS program, and can make appropriate referrals to the NLS soon after a print limitation is identified.

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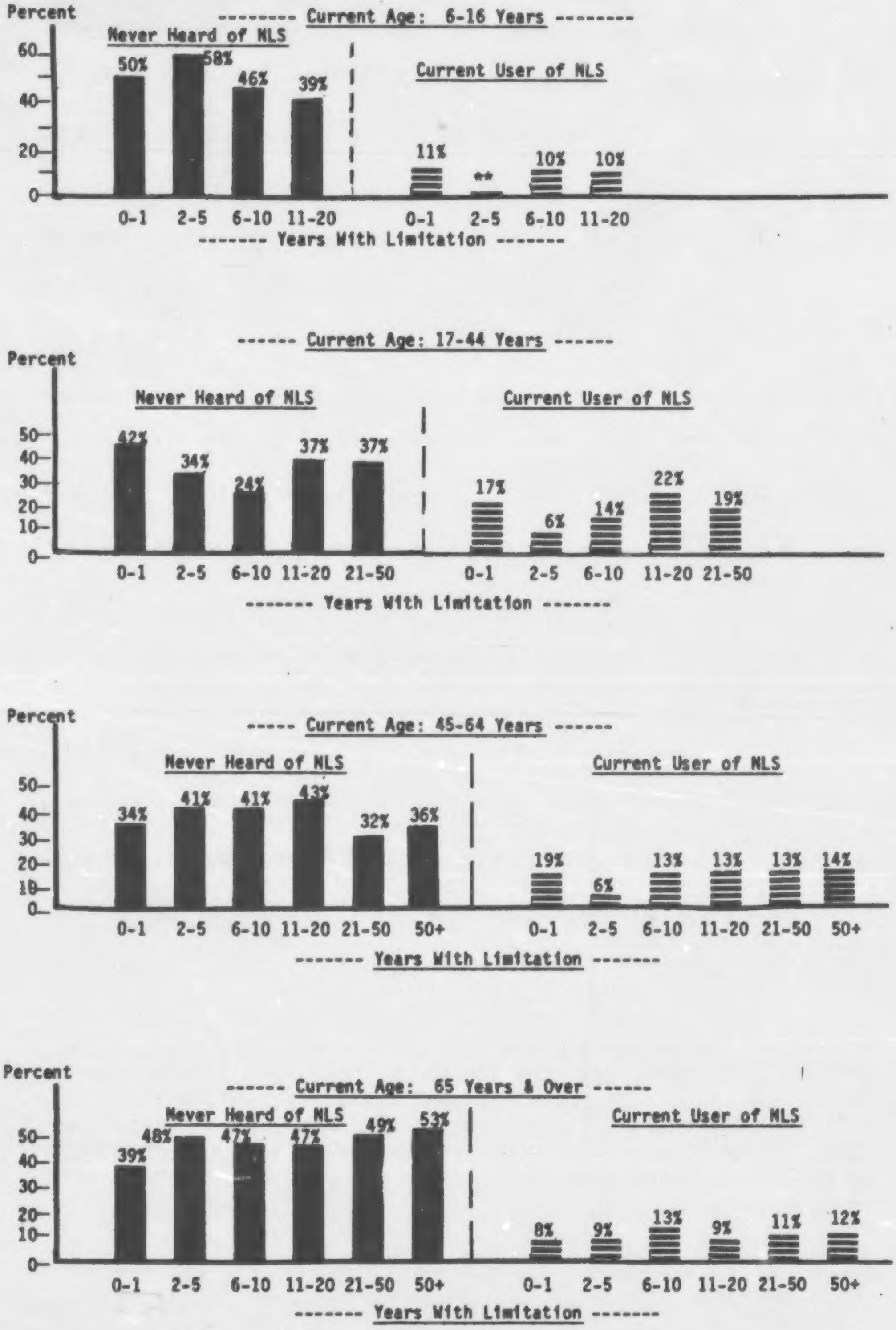
*We are, of course, making some inferences here and treating the data as if we were examining the same persons over time--which is not the case. The organizational factors regarding the NLS and the components of the program itself, also, have changed over time. Nevertheless, the cross sectional data seem robust enough to bear these extensions.

Figure 7-12

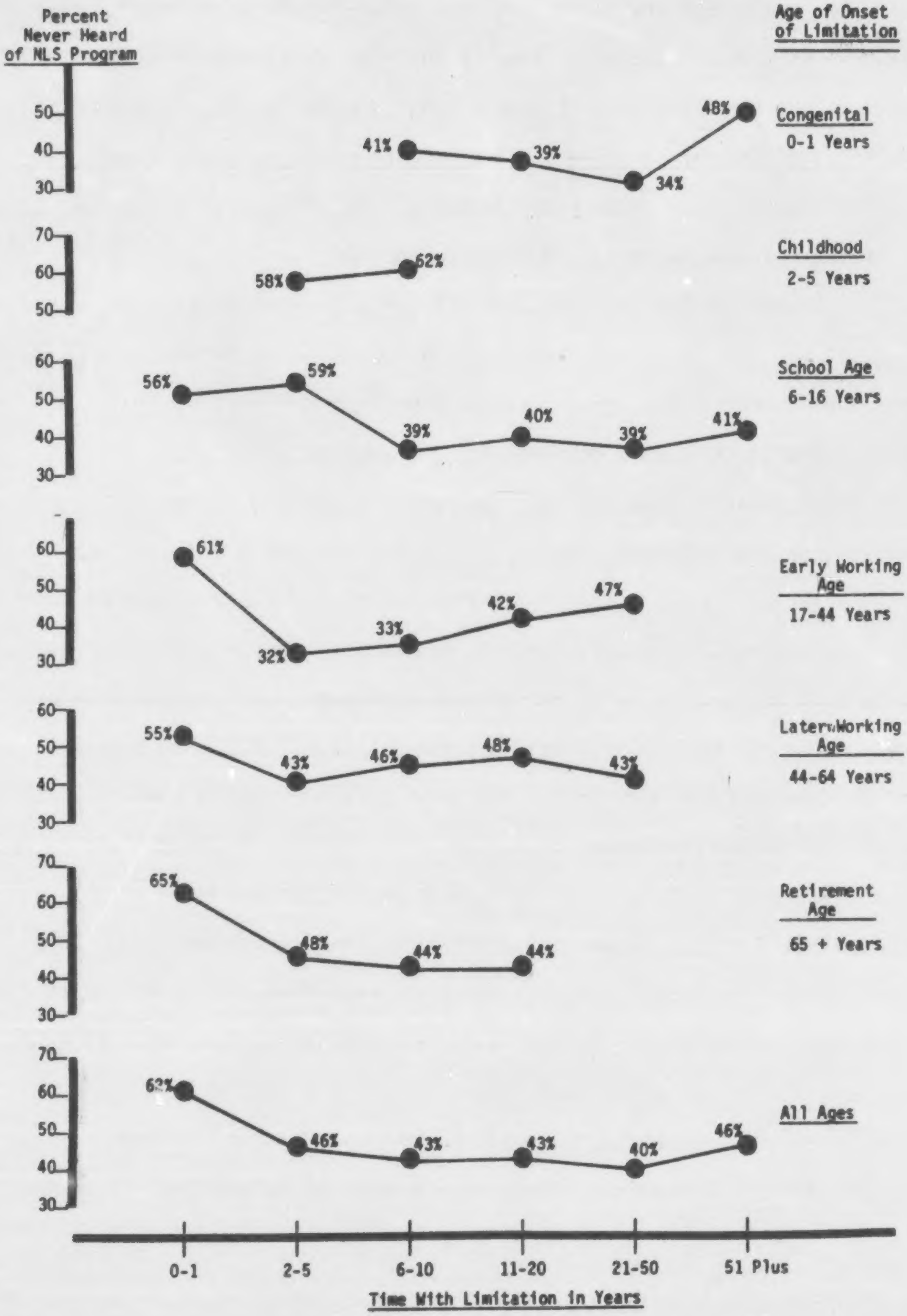
Awareness and Utilization of the NLS by Length of Time with Reading Limitation



** Less than 0.5%.

Figure 7-13

Awareness of the NLS by Length of Time With Limitation for Persons with Onset Within Given Age Groups



This finding also suggests that certain personality traits propel people to adapt to their reading limitations quite early (assuming they are readers and are inclined to continue reading in the first place.) This is consistent with our prior findings on help-seeking behavior and the importance of people's being ready to accept services, discussed in Chapter 5, and about the importance of early childhood reading experiences, discussed in Chapter 6. This issue has long been an important issue in the field of mental health.

People who are motivated to read will probably seek print alternatives when they need them, but one cannot easily transform people who have not had early positive experiences in reading and using libraries into avid readers of print alternatives.

This approach, however, puts the burden of responsibility entirely on the individual who has the disability (and/or his or her family) to learn about the NLS. It stresses the fact that a certain positive attitude or receptiveness to social services must be present if the message is to get through, without balancing that with the role of the service in reaching potential users. Thinking back to the experience of sending the respondents information packets about the program, we recall that only a very small percentage of them apparently read their mail and, as a result, became aware of the NLS program. Television and lay referral systems rather were the main ways people became aware of social programs (see Chapter 5). This evidence suggests that it is very difficult for standard outreach efforts to succeed. How to do outreach effectively is a more complicated problem than it appears at first blush, and market research techniques testing different outreach approaches are probably called for.

Leisure Life Style

Socialization--We showed in Chapter 6 that the respondents who do the most reading also lead the most active social lives. As time spent on reading increases, so does the frequency with which people participate in social activities. For example, 36% of the avid readers have extensive social contacts (i.e., several times a day), compared to 28% of the sporadic readers. More significantly, 17% of the sporadic readers have social contacts with people from outside their households, on the phone or in person less often than once a week, compared to eight or nine percent of the regular and avid readers.

Not surprisingly, there is also a connection between the amount of reading people do and their levels of awareness and use of the NLS. Persons who are least aware also have the fewest social contacts. And conversely, persons who are current users of the NLS have more social contact than non-users or those who have not heard of the NLS. See Table 7-9 and Figure 7-14.

It is hard to be quite sure of the causal chain here, because each of the three variables--the extent of socializing versus isolation, the amount and frequency of reading, and the level of awareness of the NLS program--bears on the other two. However, it appears to be more than sheer coincidence that the most socially inclined people are also the most aware of different options (services) available to them, including the NLS program, and do the greatest amount of reading.

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Table 7-9

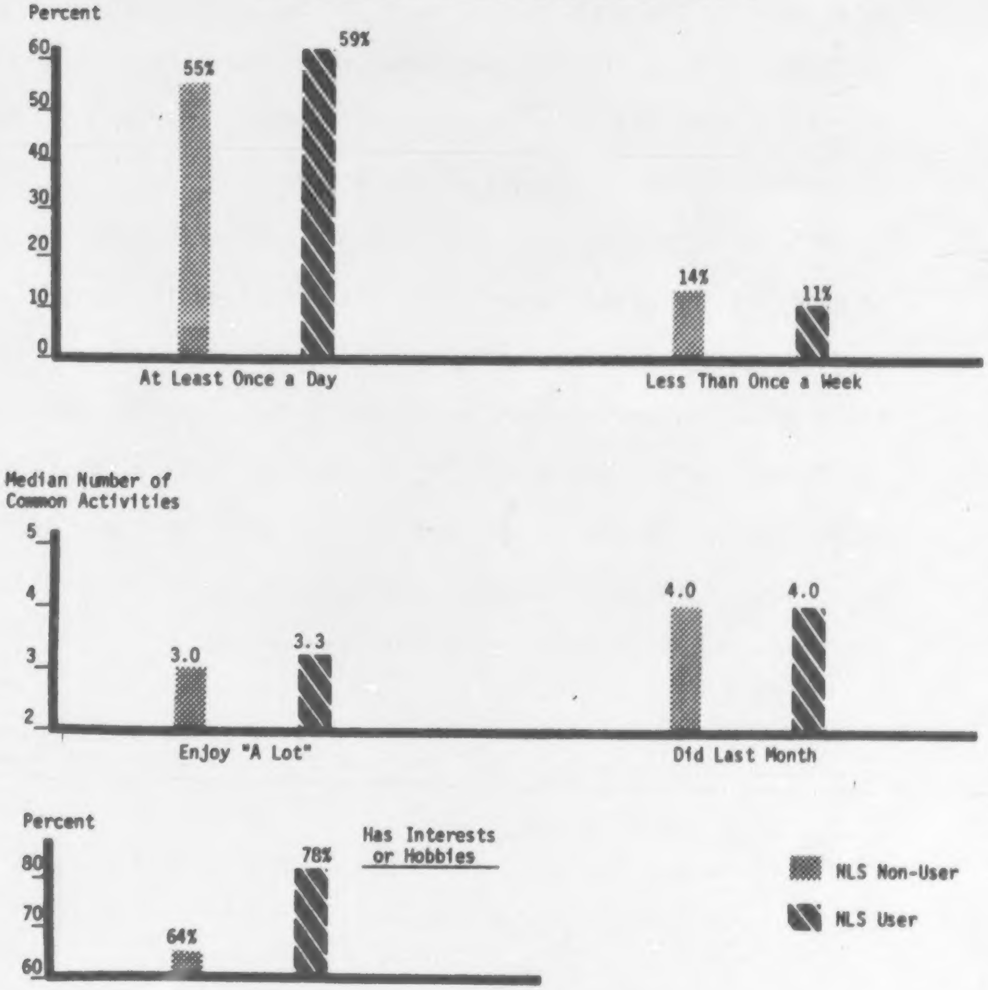
Awareness and Utilization of the NLS by Selected Participation Factors and Uses of Entertainment Media

	Awareness Level				
Social Contact With People Outside the Household	Never Heard of NLS	Heard of NLS	Familiar With NLS	Former User of NLS	Current User of NLS
	Percent				
Several Times a Day	27	25	30	33	31
Once a Day	25	28	26	28	26
Several Times a Week	24	26	24	20	27
Once a Week	7	7	4	8	4
Less Than Once a Week	17	13	16	11	11
Has Interests or Hobbies	64	70	71	72	78
Hours Per Day Watching TV					
None	9	6	9	22	14
0-1	12	11	11	18	18
2-3	41	43	42	37	42
4-5	21	23	22	18	21
6 or more	17	17	16	5	5
Hours Per Day Listening to Radio					
None	31	28	26	16	11
0-1	25	24	25	25	26
2-3	24	22	22	22	28
4-5	10	12	12	8	17
6 or more	10	14	15	29	18
Weighted Sample Size	(3099)	(1760)	(1310)	(179)	(820)

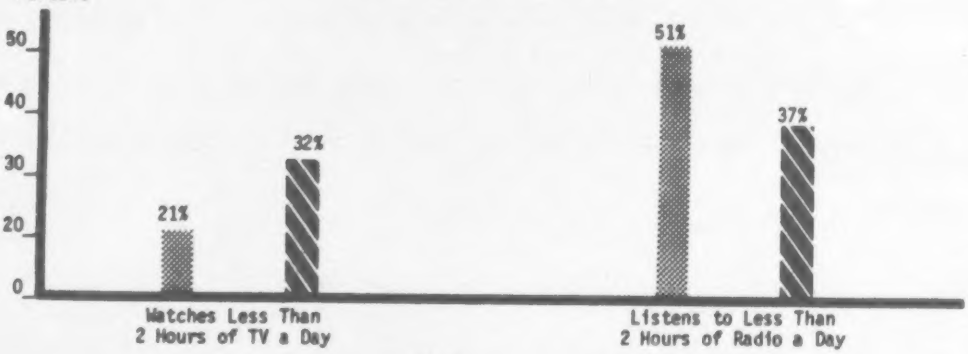
Figure 7-14

Selected Leisure Characteristics by Use of NLS Program

Social Contact With People From Outside the Home



Use of Entertainment Media



Participation in Common Activities and Hobbies--Active persons tend more often to know about the NLS than less active persons. Two-thirds of the respondents who have hobbies knew about the NLS compared to about half of those who do not have hobbies. Users of the NLS also generally had more active leisure life styles than those who are unaware of the program: 78% of the users have hobbies, whereas only 64% of the persons who were unaware of the NLS do.

NLS users, however, are not the most active in terms of doing or enjoying the eight common activities examined (cooking a meal, reading, going shopping, going out to dinner or a movie, playing board games, attending meetings, walking for pleasure, going to church).

As seen below, NLS users did, on average, only slightly more activities in the past month than persons who have never heard of the NLS. NLS subscribers, however, expressed enjoying the activities "a lot" more than any of the other non-user groups.

	Never Heard	Heard Of	Familiar With	Former User	Current User
Median Number of Activities Performed in past Month.	3.40	4.14	4.38	4.25	4.0
Median Number of Activities Enjoyed "a lot".	2.32	3.06	3.16	2.95	3.30
Weighted Sample Size	(2997)	(1696)	(1217)	(172)	(763)

Television and Radio Use--Ninety-one percent of the respondents watch TV. Although we showed earlier that about seven percent of the respondents first learned of the NLS by watching TV, we found that nonviewers learned of the NLS from other sources. In fact, heavy TV viewers were not any more or less likely to know about the NLS than light viewers or non-viewers. The amount of radio listening does, however, seem to be associated with awareness: 50% of those who do not listen to the radio had not heard of the NLS, 44% of those who listen for between two and three hours a day did not know of the NLS, and only 37% of the persons who listen six or more hours a day were unaware of the NLS program (see Table 7-9). We saw, in Chapter 5, that listening to the radio was more common among persons who are unable to see than among those with any other type of limitation.

Heavy TV viewers were less likely to be NLS users than light viewers, whereas heavy radio listeners were more likely to be NLS users. Seventeen percent of the persons who do not watch TV, or who watch for less than an hour a day are NLS users, whereas only four percent of those who watch TV for more than six hours a day use the NLS. However, this is not to say that NLS users do not watch television. Though there are relatively more non-viewers in the NLS user group than there are among non-users, NLS users who do watch television watch only slightly less TV (median 2.4 hours per day) than do persons who are not aware of the program (median 2.75 hours): the difference is only one of about 20 minutes a day. Current NLS users listen to the radio slightly more (median 2.15 hours) than persons who are unaware of the program (median 1.85 hours): here there is a difference of about 20 minutes per day in listening time.

Summary - Leisure Life Style and Awareness of the NLS

As noted previously, it seems evident that it is not just a coincidence that the persons with the most socially active leisure life styles are also the most aware of the different options (services) available to them, and are among those who do the greatest amount of reading. In terms of probability alone, it would seem that the person who exposes him/herself to more people (i.e., has more social contacts) would be more likely to find out about different activities, including reading with alternate media to regular print. The other side of the coin is that, as noted before, the most avid readers tend to be those persons who have the greatest opportunities to share or utilize their reading experiences with others.

Thus, it appears that another important element of the NLS outreach program might be to concentrate on reducing the isolation of persons with reading limitations. The use of bookmobiles, for example, which bring books and magazines to the potential users would be an ideal way of simultaneously reducing the isolation of many of these persons, and of making them aware of what the program has to offer.

THE RELATIONSHIP BETWEEN READING AND COMPOUNDING LIMITATIONS AND AWARENESS AND USE OF THE NLS

We began this study with the suggestion that the process of reading could be separated into eight components: motivation; awareness; selection; access; operation; endurance; comprehension; and sharing/utilization. It was our sense that what was unique about the reading done by persons with print limitations was the relation between those limitations and the other elements of the reading process, or more simply put, the ways in which the limitations affect the other eight components of the reading process. Thus, to complete our analysis of readership, it seems appropriate to consider the special implications of disability for awareness and use of NLS.

The NLS program very clearly has the image of a program for blind persons. Although eligibility for the NLS program was extended to persons with all reading limitations of a physiological origin in 1966, its original focus as a program for the blind, dating from its inception in 1931 still remains. As seen in Figure 7-15, approximately seven out of every ten current or former users of the NLS are legally blind and only 22% of the legally blind say that they have not heard of the NLS program: 45% of the legally blind use the program now and eight percent did formerly.

This finding, while not unexpected, is an extremely important one since it tends to confirm anecdotal knowledge that the NLS program is one of the first services that state social service agencies arrange for persons who are registering for status as legally blind,

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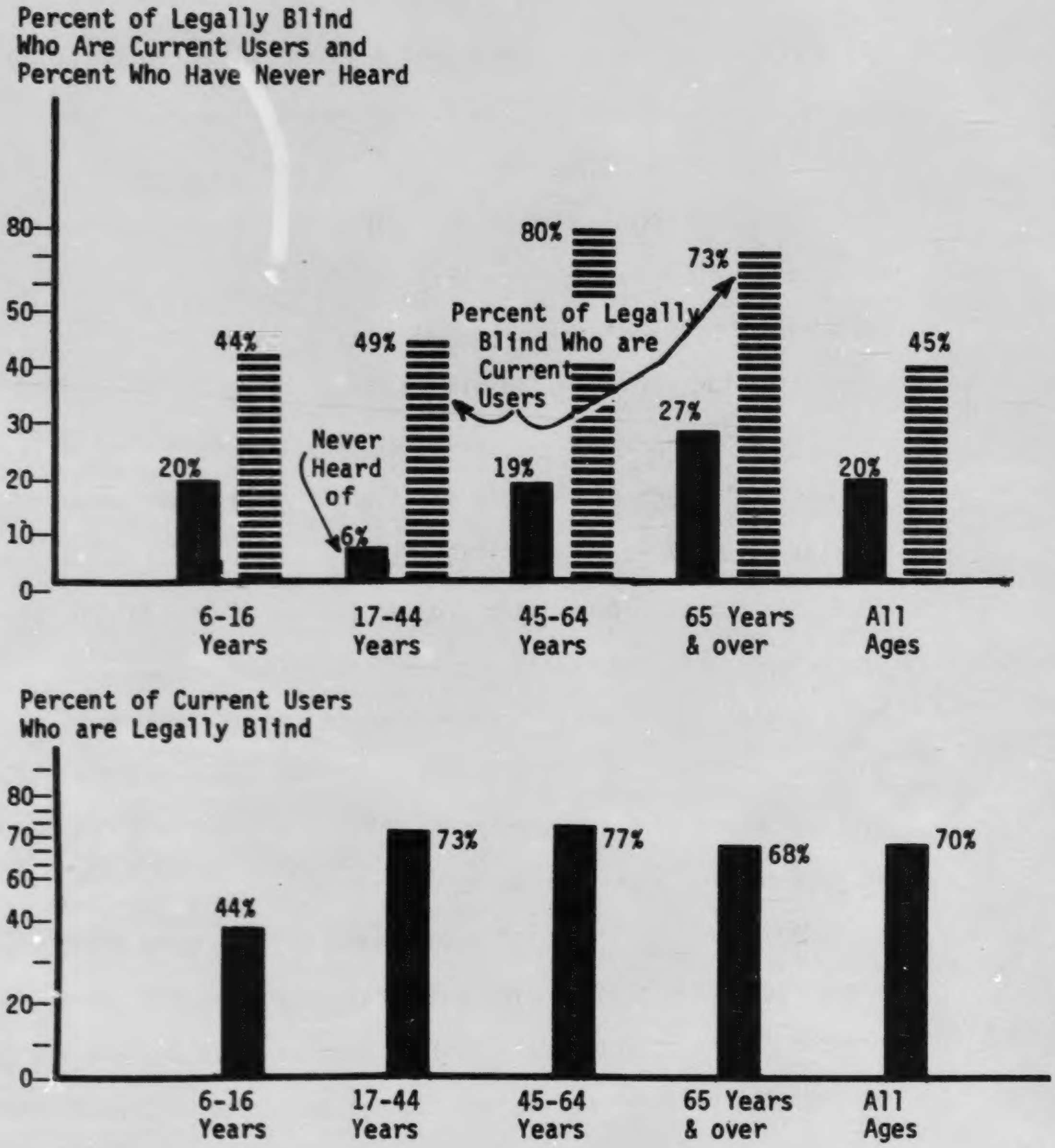
Figure 7-15

Awareness and Utilization Among Legally Blind by Age



However, the finding may be somewhat distressing in that it shows that only half of the "captive" legally blind population has an interest in the NLS program. Surprisingly, only 46% of all totally blind persons are using the NLS program now and five percent used it at one time and then stopped.

Some of the other findings that emerged are given below:

Awareness

1. With the exception of persons who suffer only from limitations in seeing, awareness of the NLS is very roughly at about the same level among persons having different kinds of reading limitations. Whereas 64 of the persons with problems only in seeing know of the NLS program, 45%-55% of respondents in other categories of the reading disability typology are aware of it (see Table 7-10).

2. Awareness of the components of the NLS program is slightly higher (5%) among persons who report "inabilities" in seeing, holding a book, turning pages, etc., as compared to those persons who report "difficulties." Though the differences are only minor, they are fairly consistent (see Figure 7-16).

3. The group of persons with learning limitations appears to be the least aware of the NLS program. Only half of the persons with learning impairments only, or their parents, know about the NLS.

4. Persons with the most severe compounding limitations in hearing, mobility and general health tend to be among those least aware of the NLS. To illustrate, 54% of the respondents in poor health say that they have not heard of the program compared to 38% of those in good health; 51% of those who are hard of hearing or deaf are unaware of the program, compared to 40% of those without hearing

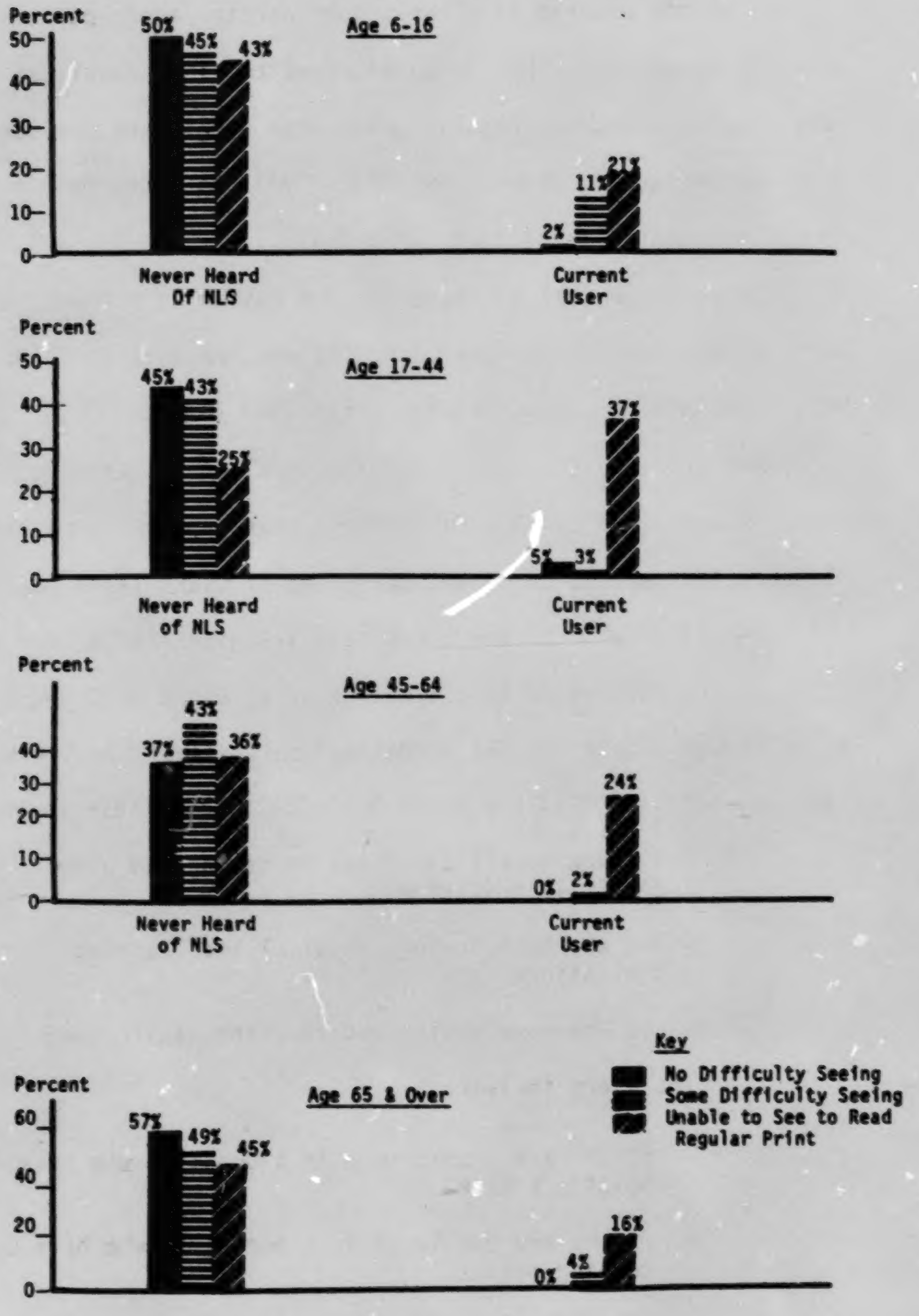
Table 7-10

Awareness and Utilization Levels by Specific Reading Limitations

	Weighted Sample Size	Total	Never Heard of NLS	Heard of	Familiar With	Former Users	Current Users
		Percent					
Seeing							
No Difficulty	(1023)	100	47	28	22	2	2
Difficulty	(2772)	100	46	27	21	2	4
Unable	(3403)	100	40	21	15	3	21
Holding							
No Difficulty	(5753)	100	43	24	19	3	12
Difficulty	(921)	100	46	28	18	1	7
Unable	(524)	100	45	28	12	4	11
Turning							
No Difficulty	(6075)	100	42	24	19	3	12
Difficulty	(628)	100	49	26	17	1	6
Unable	(496)	100	46	27	12	4	11
Sitting Up							
No Difficulty	(6325)	100	43	24	19	2	12
Difficulty	(437)	100	52	26	14	3	5
Unable	(436)	100	42	25	14	4	14
Weakness							
No Difficulty	(3902)	100	41	25	18	3	13
Difficulty	(687)	100	49	24	17	2	8
Unable	(2609)	100	44	24	19	2	11
Learning							
None	(4683)	100	40	24	19	2	15
Perception	(1560)	100	48	25	19	3	6
Memory/Confusion/ Attention Span	(609)	100	50	26	19	2	4
Mental Retardation and Other	(347)	100	56	25	9	4	6

Figure 7-16

Awareness and Utilization of the NLS by Level of Severity of Seeing Limitations for Different Age Groups



limitations (see Table 7-11).

Utilization

1. Use of the program is clearly concentrated among persons with visual limitations. This is to be expected since about 83% of the respondents cannot see regular print with eyeglasses, or have difficulties seeing print. But 98% of all NLS users have a limitation in seeing regular print (see Table 7-12).

2. Eighty-six percent of the users are unable to see well enough to read newspaper print, including 18% who are totally blind and 12% have difficulties seeing regular print (see Figure 7-17).

3. There are very few users who have physical or learning limitations only. About 1% of the NLS subscribers have physical problems only, although the rate is 6% in the age group of users 17-44 years old.

Overall only 1% of the users have learning limitations only, although the rate is 6% in the age group of users 6-16 years old.

4. Although 52% of the NLS users have only visual limitations in reading, 46% have multiple reading limitations. These include:

- 31% who have limitations in seeing and other physical limitations;
- 10% who have seeing, physical and learning limitations; and
- 5% who have seeing and learning limitations.

The users include:

- 8% who are unable to hold a book; 6% who have difficulty holding a book;
- 7% who are unable to turn pages; 5% who have difficulty turning pages;

Table 7-11

Awareness and Utilization Levels by Compounding Limitations

	Weighted Sample Size	Total	Never Heard of NLS	Heard of	Familiar With	Former User	Current User
		Percent					
Compounding Limitations							
Hearing							
No Difficulty	(5351)	100	40	25	19	3	13
Hard of Hearing or Deaf	(1847)	100	51	23	17	1	7
Mobility							
No Difficulty	(3501)	100	46	24	22	1	6
Some Difficulty	(631)	100	43	26	18	2	12
Needs Aid/Person	(1354)	100	31	22	13	5	28
Confined to House	(1240)	100	48	25	14	4	9
Confined to Bed	(375)	100	42	26	20	4	8
Health							
Good	(3727)	100	39	25	19	3	14
Fair	(2391)	100	46	24	19	1	9
Poor	(1029)	100	54	23	14	3	7
Serious Non-Reading Problems							
None	(3650)	100	40	24	19	3	15
One	(2116)	100	47	25	18	2	9
Two or More	(926)	100	46	26	18	2	8
Speed of Talk on TV and Radio							
Too Slow and About Right	(5599)	100	42	24	19	3	12
Too Fast	(1007)	100	42	27	19	2	11
Number of Entertainment Media (TV, Radio, Record Player, Cassette Player) Can Operate Independently							
4	(3902)	100	37	27	20	2	13
2-3	(2191)	100	49	22	17	3	9
0-1	(574)	100	48	25	12	4	11

Table 7-12

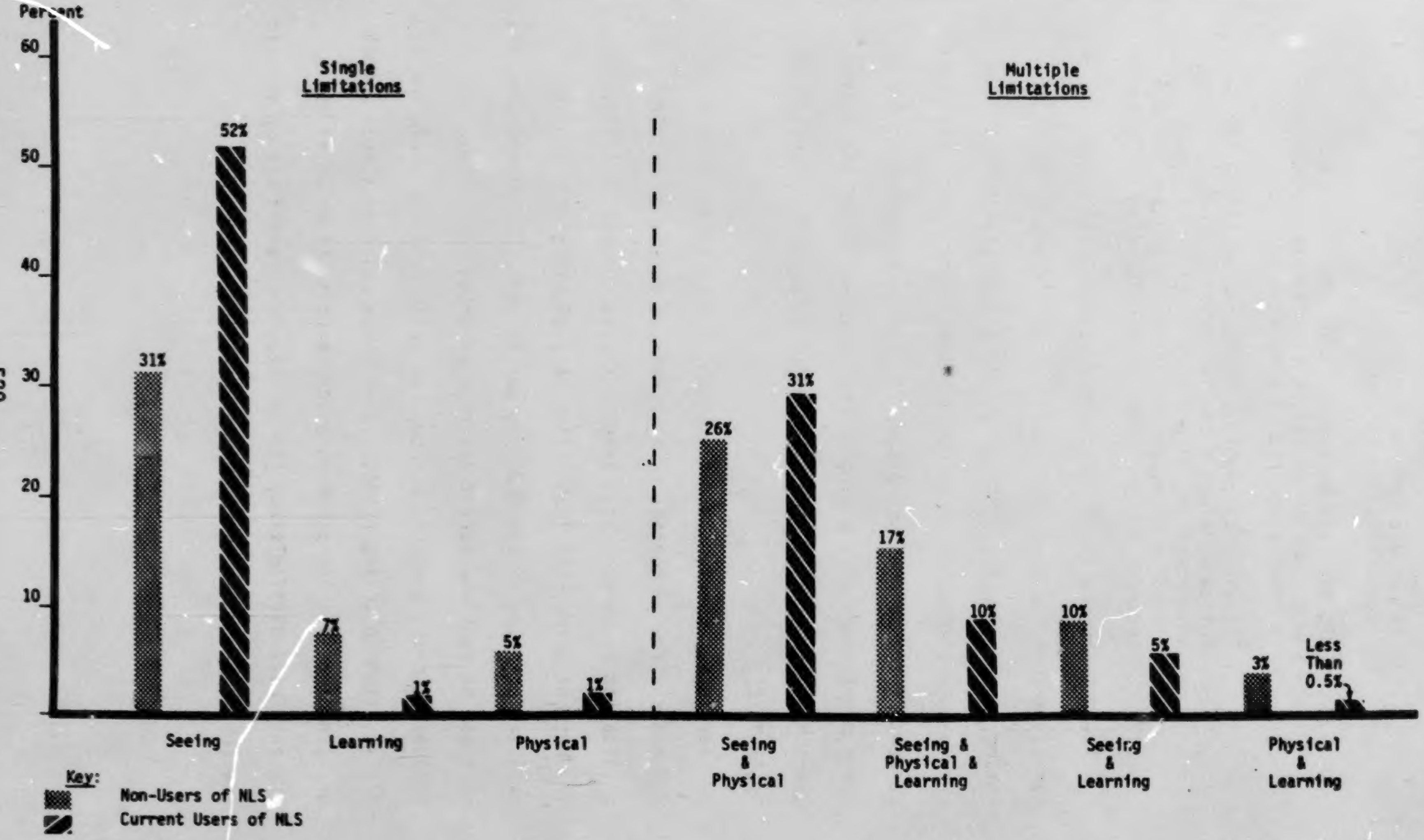
Selected Characteristics of Reading and Compounding Limitations of Current NLS Users and Non-Users

Reading Limitations	NLS Users	Non-Users
	--------Percent--------	
1. Specific Limitations		
No Difficulty Seeing	2	16
Difficulty Seeing	12	42
Unable to See	86	42
Legally Blind	75	14
Totally Blind	18	3
2. Reading Typology		
Single Limitation		
Seeing Only	52	31
Learning Only	1	7
Physical Only	1	5
Multiple Limitations		
Seeing & Physical	31	26
Seeing & Physical & Learning	10	17
Seeing & Learning	5	10
Physical & Learning	*	3
3. Severity		
Minor	5	22
Moderate	7	30
Severe	48	15
Very Severe	40	32
Compounding Limitations		
Hard of Hearing or Deaf	14	31
Health		
Good	65	50
Fair	27	35
Poor	9	15
Mobility		
No Difficulty	27	53
Some Difficulty	9	9
Uses Aid or Person	47	15
Confined to Home	14	18
Confined to Bed	4	6

*Less than 0.5%.

Figure 7-17

Reading Typologies by Use of the NLS Program



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584

- 7% who are unable to sit up to read; 2% who have difficulty sitting up;
- 33% who cannot read for more than a few minutes on account of weakness; 6% who have difficulty in reading because of weakness; and
- 11% who have problems in reversing letters or words. following along a line or other learning problems in perception; 3% who have problems in memory, attention span, or confusion; 3% who are mentally retarded or have other severe learning limitations.

5. The NLS program is utilized almost exclusively by persons who cannot perform the essential functions of reading print (i.e., seeing, turning pages, sitting up...), as compared to those who merely have difficulty in performing these functions. Forty-eight percent of the current users have at least one inability: 48% of the current users have a single inability, and 40% of the current users have one or more inabilities plus other difficulties (see Table 7-12).

For former users, the differences, though typically only on the order a few percentage points, reflect double or triple utilization by persons with inabilities as opposed to difficulties. The current users with inabilities have significantly higher utilization rates of the NLS programs as well. To illustrate, 21% of those persons who cannot see regular print now utilize the National Library Service, as compared to 4% of individuals who have difficulties in seeing print; 11% of those who cannot hold a book or turn pages use the program, as compared to 6% or 7% of those who only have difficulties; 14% of those who cannot sit up to read use the NLS, as compared to 5% who merely have difficulties.

6. NLS users tend to be relatively healthy, and unlike the non-users, have relatively few mobility, hearing and other compounding limitations in addition to their reading limitation.

Among the current users, 65% are in good health, 27% are in fair health and 9% are in poor health. A quarter of the subscribers report no mobility difficulties, and half use a long cane or another person for assistance getting about. (Only 17% of the NLS users are homebound, or looked at the other way, only 9% of the homebound are subscribers.) Two-thirds of the users indicate that they do not suffer from any major medical problems other than their reading limitation, and six-sevenths do not have hearing loss. Those subscribers who do have hearing loss--we estimate that there are about 40,000 such persons in the household population--recently had the opportunity to demonstrate their needs to NLS. A recent shipment of 20,000 headsets was quickly exhausted and waiting lists for headsets are still long.

Regression Analysis of Awareness and Use of the NLS

The factors that were seen to have a strong relationship with awareness and use of the NLS were chosen as independent variables for three multiple regression models. The aim of these models was to predict future awareness and utilization of the NLS program assuming operation of the program continues as in the past.

The dependent variables in the three models were:

(1) Level of Awareness/Use - This variable had five values associated with the five awareness/use levels of the respondents previously specified:

a) Never Heard = 1
b) Heard Of = 2
c) Familiar With = 3
d) Former User = 4
e) Current User = 5

(2) Never Heard of- This was a dichotomous variable equivalent to Yes = Never Heard
No = All other

(3) Current User - This was a dichotomous variable equivalent to Yes = Current User
No = All other

Models 2 and 3 examine subcategories of awareness and use in Model 1. It was our thought that it would be worthwhile to attempt to understand more fully the factors governing such things as opening one's mail that led us to Model 2; and to understand these factors' actual application to the NLS that led us to Model 3. The current users comprise only 12% of the respondents, whereas the group that never heard of the NLS comprised 43% of the respondents. Conceptually, then, there are no strong reasons to expect that the factors that will explain use by 12% of the population will also explain a total lack of awareness. Hence the three models.

The independent variables and their categories were:

Variable	Categories
Age	--Actual Age in Years
Sex	--Male or Female
Race	--White, Non-White
Education	--Highest Grade of School Completed (0-16+)
Household Income	--Under $5,000, $5,000 - $9,999, $10,000 - $14,999, $15,000 - $19,999, $20,000 and over
Census Region	--North East, South, North Central, West
Urbanization	--Within Standard Metropolitan Statistical Areas (SMSA) or Outside SMSA
Vision Status	--No Seeing Limitations, Difficulty Seeing Regular Print, Inability to See Regular Print (The No Seeing Limitation Group includes those with physical or learning limitations)
Legal Blindness	--Whether or not the individual has obtained certification from some competent authority in the blindness system that he/she is legally blind, certification is required for entree to many organized social services e.g., to gain tax relief
Age of Onset	--Age when the reading limitation first occurred

We found that almost all of the explained variation in the first dependent variable--Level of Awareness/Use--could be related to four variables: certification of legal blindness, education, severity of seeing limitation and race. Other independent variables explain less than one percent of the variability. Certification of legal blindness is by far the most powerful predictor: by forcing it to enter eighth after seven other independent variables including vision status, education, age and ethnicity, we see the strength of this factor. A multiple

r^2 of 0.27 was achieved overall using either the ten variable model or the simpler four variable model below:

$$\underline{\text{Level of Awareness/Use of NLS program}} = B_0 + B_1 \text{ Legal Blindness} + B_2 \text{ Education} + B_3 \text{ Vision Status} + B_4 \text{ Race} + w$$

where the "B's" are the regression coefficients and "w" is the random disturbance term.

In Model 2, we sought to identify the key determinants of whether the respondents had ever heard of the NLS program or not. The same four key factors found in Model 1 are also seen to be associated with almost all of the explained variation for lack of awareness. A multiple r^2 of 0.11 was achieved.

In Model 3, three independent variables, legal blindness, vision status and education are seen also to be associated with almost all of the explained variation of current use of the NLS program. Here a multiple r^2 of 0.26 was achieved.

In the regressions, we wished to partial out the effects of vision status, age, sex, education, race, region and age of onset from the consideration of "legal blindness." Consequently, "legal blindness" was entered into the regressions after the effects of the other factors above had been controlled. "Legal blindness" then serves as a proxy variable for certain personality traits and attitudes reflecting the individual's motivation to seek out and utilize, or his/her receptiveness to, social services, which might enable the individual to compensate for, or adapt to his/her reading limitation.

We found, in Chapter 5, that the likelihood of an individual's seeking out and utilizing social services did not increase appreciably with the length of time he/she had had the limitation. That is, a person who went blind ten years ago is not much more likely to utilize the NLS program than a person who has just lost his/her vision. Consequently, "readiness" not only to accept, but to seek out social services is a crucial factor in awareness and use.

Without the specification of formal hypotheses, the usual procedure in multiple stepwise regression models is to enter the independent variables into the regression in descending order of their contribution to variance explained. Based on the results of the cross tabular analyses that have formed most of this report, we selected age, education, ethnicity, urbanization, vision status and certification of legal blindness as predictors.

The results of the regression models are shown in Table 7-13.

Table 7-13

Factors Affecting Awareness and Use: Three Multiple Regression Models

Model 1. Dependent Variable: Level of Awareness/Use

Independent Variable (in order of entry)	Multiple R^2	R^2 Change	Simple R (zero order)	Unstandardized Regression Coefficients* $x10^{-3}$	Beta Weights	Standard Errors of Regression Coefficients	F
Age of Onset	0.0025	0.0025	-0.0500	0.5038	0.0112	0.0009	0.308
Age	0.0026	0.0001	-0.0469	-3.7905	-0.0707	0.0012	10.492
Sex	0.0040	0.0014	-0.0461	16.8881	0.0066	0.0317	0.284
Highest Grade of School Completed	0.0676	0.0636	0.2485	44.2292	0.1692	0.0033	176.783
Vision Status	0.1183	0.0507	0.1958	148.0345	0.0809	0.0259	32.705
Region	0.1187	0.0004	0.0167	25.2059	0.0182	0.0167	2.291
Race	0.1306	0.0109	-0.1481	-269.5798	-0.0781	0.0432	39.014
Legally Blind	0.2656	0.1360	-0.4652	-1275.0490	-0.4050	0.0419	926.605
Urbanization	0.2663	0.0007	0.0922	66.5876	0.0241	0.0342	3.811
Income	0.2673	0.0010	0.1233	35.8133	0.0361	0.0139	6.646

Adjusted R^2 = 0,2659

* Significant at 0.05 level

Weighted N = 7229, Raw N = 2041

Model 2. Dependent Variable: Never Heard of NLS Program

Age of Onset	0.0016	0.0016	0.0400	-0.0538	-0.0031	0.0002	0.003
Age	0.0025	0.0009	0.0495	0.9201	0.0454	0.0003	3.967
Sex	0.0026	0.0001	0.0231	-7.2300	-0.0075	0.0078	0.214
Highest Grade of School Completed	0.0626	0.0600	-0.2424	-17.9649	-0.1828	0.0008	41.455
Vision Status	0.0688	0.0062	-0.0599	-17.1923	-0.0250	0.0064	75.756
Region	0.0709	0.0021	-0.0529	-23.3254	-0.0448	0.0041	1.066
Race	0.0841	0.0132	0.1542	127.9528	0.0986	0.0106	2.718
Legally Blind	0.1068	0.0227	0.2083	191.6697	0.1619	0.0103	1088.818
Urbanization	0.1084	0.0016	-0.0848	-35.7074	-0.0343	0.0084	0.294
Income	0.1112	0.0028	-0.1480	-23.3791	-0.0627	0.0034	0.991

Adjusted R^2 = 0.1095

Model 3. Dependent Variable: Use of NLS Program

Age of Onset	0.0010	0.0010	-0.0317	-0.0121	-0.0011	0.0002	0.003
Age	0.0015	0.0005	-0.0122	-0.5721	-0.0436	0.0003	3.967
Sex	0.0031	0.0016	-0.0411	3.5934	0.0057	0.0078	0.214
Highest Grade of School Completed	0.0264	0.0233	0.1498	5.2566	0.0821	0.0008	41.455
Vision Status	0.1037	0.0774	0.2555	55.2956	0.1234	0.0064	75.756
Region	0.1039	0.0002	0.0014	4.2198	0.0124	0.0041	1.066
Race	0.1061	0.0022	-0.0779	-17.4636	-0.0207	0.0106	2.718
Legally Blind	0.2645	0.1586	-0.4957	-339.2208	-0.4397	0.0103	1088.818
Urbanization	0.2648	0.0001	0.0618	4.5380	0.0067	0.0084	0.294
Income	0.2649	0.0001	0.0542	3.3937	0.0140	0.0034	0.991

Adjusted R^2 = 0.2635

Discussion

The interpretation of the legal blindness variable is critical to understanding the regression models. We have proposed that, after the effects of age, education, sex, race, culture, etc., have been partialled out, this variable reflects personality factors which motivate individuals to seek helping services commensurate with their reading limitations.

Previous studies have not dealt with the issue in detail. Kahn and Moorhead (1973) reported that the certification of legal blindness on state registers in the Model Reporting Area show higher prevalence rates for non-whites than for whites. They argue that more severe cases of vision loss related to higher rates of hypertension, diabetic retinopathy (especially in females) and glaucoma may contribute to a situation where non-whites are more likely to be registered with a state agency for the blind than whites. Another contributing factor suggested by Kahn and Moorhead is income; here poor persons, many of whom are non-whites, are thought more likely to seek registration than persons who are in either the upper or middle classes.

Our data both support and contradict the above interpretations. First, our age-specific data below show that the percentage of non-whites who have visual limitations and report themselves to be legally blind is about 10%-13%, whereas the age-specific percentage of persons with visual limitations who are non-white is 15%-22%.

Age	Percent of persons with vision limitations who are non-white	Percent of persons reporting certification as legally blind who are non-white
6-16	22	13
14-44	19	11
45-64	21	13
65 years and Over	15	10

We have previously shown, in Chapter 3, that household income is not a strong predictor of certification of legal blindness, but that if there is any effect, it is rather that poorer persons seek certification less often than more affluent persons. Similarly, relatively less well-educated persons seek certification less frequently than better-educated persons, and men seek certification about one and a half times as often as women.

Since the data also show that non-whites tend to have more severe visual limitations than whites (although the rates of total blindness are about the same), the implication is that non-whites do not seek eye care, and subsequent certification of legal blindness as often as whites. Of course, our findings might be consistent with Kahn's if ophthalmologists registered legally blind persons with state agencies without clearly informing their patients that they were doing so; or if there were a lack of understanding about the meaning of legal blindness on the part of non-whites in terms of receiving services.

Consequently, we return to our previous interpretation of the "legal blindness" in the regressions as a proxy variable for personality and attitudinal factors, reflecting the motivation to seek out and utilize services associated with vision loss.

The implication of these results for the NLS is that the effectiveness of outreach activities to expand use of the current program is likely to be limited. As we shall see, this is also the conclusion we drew from the responses made by non-users regarding the reasons for their non-use of the NLS program. This issue is taken up in the next section.

POTENTIAL DEMAND FOR THE NLS PROGRAM

Interest in Trying the NLS Program

Respondents who were neither former users nor current users of the NLS were given an explanation of the program over the telephone and were asked a few questions about their potential interest in trying the program. Although these kinds of conjectural questions are prone to high inaccuracy both because of the nature of the questions and the usual desire on the part of interviewees to make a good impression on the interviewers, they probably serve as a guide to an upper estimate of the potential demand for the NLS program.

A quarter of the respondents (26%) who either have not tried or are not now using the NLS program said that they were "very interested" in trying it. Another 22% said that they were "somewhat interested" in trying it. Fifteen percent said that they were "not very" interested in trying the program and 36% said that they were "not at all" interested in print alternatives.

Taking a conservative estimate, a quarter of the non-user population expressed a significant interest in the program. Since the program is currently being utilized by only 12% of the target population, a substantial expansion appears to be possible.

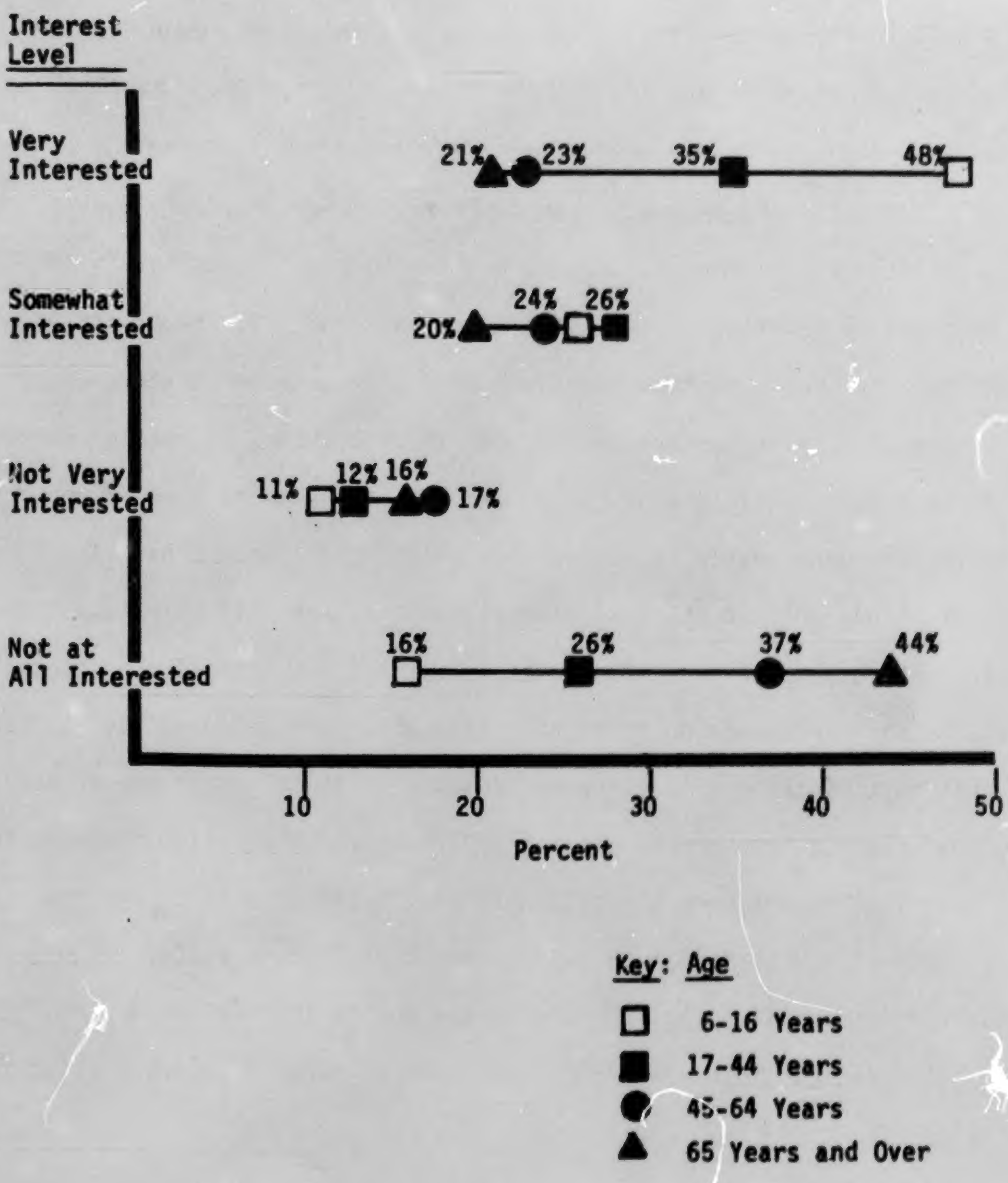
Age is a strong predictor of interest. Nearly half of the parents of school age persons expressed a very strong interest (47% said "very interested"), compared to considerably fewer persons in the working ages (35% between 17-44 years old and 23% between 45-64 years old said "very interested"), and still fewer elderly persons (21% said "very interested"). The same age pattern--the younger persons (or their parents) were more enthusiastic than the older--was present for other questions as well. (See Figure 7-18.)

Males and females expressed similar levels of interest. But non-whites were nearly twice as enthusiastic about trying the program as whites: the percentages of non-whites and whites who were "very interested" were 42% and 23%, respectively. There were no notable variations by region or by metropolitan/non-metropolitan areas.

Education and income, taken separately, were only very weakly associated with interest. Nor were there very different levels of interest by severity or type of limitation. That is, the proportion of persons unable to turn pages who said that they were "very interested" in trying the program was about the same as that of persons who had difficulty turning pages, and also the same as that of non-users who were unable to see regular print. Persons who had visual limitations only or physical limitations only were slightly less interested than persons with multiple limitations. Legally and totally blind non-users were no more interested than average, possibly indicating that most of the really concerned readers in these groups are already subscribers. But persons who had undergone rehabilitation training for their limitations were significantly more interested in trying the program than others (42% said they were "very interested"). It was somewhat surprising that so many of the people that had undergone rehabilitation training--312,000 nationally--were not already using the NLS.

Figure 7-18

Interest in Trying the NLS Program by Age



Learning disabled persons, on the other hand, were significantly more interested in trying the program (according to reports made by their parents): 35%-45%, depending on the specific learning limitation, said they were "very interested." Poor health and restricted mobility do not appear to be deterrents of expressed interest either, suggesting, on the whole, a very positive and open attitude.

Media and Material Preferences

When asked what reading materials they might be interested in, the respondents seemed to focus more on the types of media available (record, cassette, large print) than upon the types of materials (books, magazines) being offered. For example, people who prefer to read using cassettes usually said they like both magazines and books. These data are given in the Pearson correlation matrix in Table 7-14.

Table 7-15 shows additionally that 64%-69% are interested in books and 54%-59% are interested in magazines. Only about four percent of the non-users expressed an interest in braille materials, hence, little absolute growth in braille use can be expected. Headphones, remote control devices and pillow phones were felt to be useful by about a third of the non-users of the NLS.

Reasons Why Persons Were not Interested in Trying the NLS Program

We also asked the same 85% of the respondents who had not used the NLS program to discuss what problems they could foresee in using it and to give reasons for their lack of interest in trying the program. Approximately 45% of the non-users reported, on hearing a description of the NLS program, that they could not foresee any particular problems

Table 7-14

Pearson Correlation Coefficients Between Interest Expressed in Trying Elements Offered in the National Library Service Program

Element	NLS 1	Talking Books on Records 2	Talking Books on Cassettes 3	Magazines on Records 4	Magazines on Cassettes 5	Head-phones 6	Pillow Phones 7	Remote Control Devices 8	Large Print Books 9	Large Print Magazines 10	Braille Books 11
1. NLS	1.0	.06	.20	.08	.18	.21	.10	.10	.05	.02	.03
2. Talking Books on Records		1.0	-.03	.64	-.06	.10	.09	.11	.03	.02	.03
3. Talking Books on Cassettes			1.0	.06	.71	.20	.19	.21	-.03	-.03	0.09
4. Magazines on Records				1.0	.26	.19	.19	.22	.02	.11	.09
5. Magazines on Cassettes					1.0	.26	.26	.26	-.02	.07	.11
6. Headphones						1.0	.44	.44	.05	.04	.07
7. Pillow Phones							1.0	.53	-.01	.02	.12
8. Remote Control Devices								1.0	.03	.08	.12
9. Large Print Books									1.0	.84	.08
10. Large Print Magazines										1.0	.07
11. Braille Books											1.0

Table 7-15

Media Preferences of Current Non-Users of the National Library Service Who Indicate That They Are "Very Interested" or "Somewhat Interested" in Trying the Program

MEDIA	Weighted Sample Size	Percent Expressing Interest
Books		
On Records	(2699)	69
On Cassettes	(2719)	67
Large Print	(2428)	64
Braille	(1744)	4
Magazines		
On Records	(2590)	54
On Cassettes	(2612)	56
Large Print	(2382)	59
Braille		
Accessory Devices		
Headphones	(2575)	37
Remote Control Devices	(2503)	35
Pillowphones	(2467)	16

in using it, or any reasons why they would not want to try the program. Although many of the 55% of the respondents who offered problems said that they would have to try the program before they could respond fully, on the whole, they seemed to give frank and open answers, which we have summarized below:

Reasons for Lack of Interest in NLS Program

Life Style/Not Interested	57%
Condition is not bad enough/ program is only for the blind or sick	29%
Condition is too bad	10%
Too old	5%
Problems with components of the NLS program	4%
Weighted Sample Size	(3226)

Table 7-16 gives the responses in more detail. As in the general population, where not having enough time or lack of interest accounts for the low level of reading done by many people, being too busy or not being interested in reading explains over half of the non-use of the NLS program. The other major portion of non-use falls under the general heading of physical condition, which is either "too bad" or "not bad enough." It was not possible to clearly distinguish many of these responses which is why we have pooled answers into a large group. Non-users who were knowledgeable about the program (the Heard of and Familiar groups) gave the response that their health or disability was "not bad enough" about one and a half times as often as the group who had Never Heard of the NLS program before: Other than that the responses of these three non-user groups were fairly similar.

Table 7-16

Reasons Why Non-Users Were Not Interested in Trying the NLS Program

	Percent*	
Not Interested/Lifestyle Too Busy		57%
1. Not interested, too much trouble/not worth the effort	19	
2. Don't have the time/too many other interests, responsibilities	7	
3. Don't need it since stopped working or going to school	7	
4. Don't want to depend on service/can get along without it/prefer reading even with difficulty/don't want charity	6	
5. Get help from other people in reading	5	
6. Dislike large print, recordings, braille/prefer TV, print, other	4	
7. Dislike reading/not interested in books	4	
8. Don't want responsibility/might lose or damage equipment	2	
9. Resent disability, other	2	
10. Want to be left alone and not bothered	1	
Health Condition Is Not Bad Enough		29%
Service is not for my problem, its only for the blind	5	
Don't want to use it till I really need it/problem has improved	24	
Health Condition Is Too Bad		10%
Physical problem/poor health/too tired, weak, sick/in too much pain	5	
Learning problem/can't comprehend, understand, remember, concentrate	3	
Emotional problem/too nervous/impatient, overwrought	2	
Age		5%
Too old	5	
Too young	**	
Problem With NLS Program		4%
Using Equipment/need help	2	
Receiving, returning materials	1	
Other problem	1	
Need More Information/Don't Want To Be Trapped Into Paying For It		5%
Other		2%
Weighted Sample Size		(3226)

* Percents add to more than 100% as multiple responses accepted.

** Less than 0.5%.

The responses to these questions also gave us an opportunity to examine again the importance of the family in adapting to reading limitations. These data are given in Table 7-17. Family members and persons with print limitations gave reasons such as "no interest," "too busy," "too old," and "problems with service," in about the same proportions. But family members said the individual's "condition was too bad" far more often than the persons with the impairment themselves did (24% of the time compared to 4%); and said the individual's "condition was not bad enough" far less often (16% compared to 36%). In the first case, it appears that families tend to feel that the effects of the limitation are worse than the individual who has the reading limitation does; and in the second case, it appears that they tend to minimize the problem or perhaps not to realize how beneficial it might be for the individual to have access to print alternatives. Of course, both of these interpretations are only speculations. It may also be that the family members were responding for the individual because the person's limitation made it impossible for him/her to do so, and that the persons who have the limitations dislike perceiving them as serious ones, and prefer to see themselves as perfectly capable of reading without print alternatives even when they are not.

There is also considerable variation in the reasons given, according to social, demographic, and disability factors. Some of these patterns are shown in Tables 7-18 and 7-19. As an example, the data in Table 7-18 show that as severity increases, the likelihood that the respondents will report that their condition is "not bad enough" goes down,

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Table 7-17

Foreseen Problems in Using NLS Program or Reasons Why Respondents Would Not Like to Try it by Selected Social and Demographic Factors

Factor	Weighted Sample Size	Life Style/ Not Interested	Too Old or Too Young	Condition Is Not Bad Enough	Condition Is Too Bad	Problems With Components of NLS Service	Need More Information/ Other
		----------	----------	Percent**	----------	----------	----------
Age							
6-16 Years	(254)	50	6	22	13	4	14
17-44	(347)	46	*	38	6	6	12
45-64	(842)	43	2	39	6	2	13
65 and Over	(1785)	55	8	24	13	1	10
All	(3228)	51	5	29	10	2	11
Sex							
Male	(1209)	54	4	24	13	2	12
Female	(2002)	49	6	32	9	3	11
Race							
White	(2729)	52	5	29	11	1	11
Non-White	(439)	49	5	29	8	12	16
Education							
Elementary	(1281)	55	6	21	11	4	11
High School	(1147)	48	5	35	8	2	12
College	(573)	46	8	44	6	2	11
Income							
Less Than $5,000	(1386)	52	6	24	11	5	12
$5,000 - $10,000	(725)	51	3	38	11	1	8
$10,000 - $15,000	(283)	42	3	39	7	4	10
$15,000 and Over	(368)	44	6	34	9	3	14
Usual Life Role							
Taking Care of Home	(1447)	48	5	40	4	1	12
Going to School	(312)	46	7	26	10	6	14
Working	(453)	43	*	50	3	1	8
Looking for Work	(58)	53	*	33	*	4	12
Retired	(1535)	55	8	24	11	3	12
Not Working for Other Reason	(698)	49	3	24	17	4	13
Living Situation							
Alone	(793)	53	5	33	5	3	12
With Others	(2377)	50	5	28	11	2	10
Stage When Difficulty Began							
Congenital	(330)	52	3	18	16	6	12
Childhood	(81)	32	5	36	9	8	13
School Age	(354)	51	5	39	4	1	11
Early Working Age	(447)	39	2	44	5	2	13
Later Working Age	(827)	52	3	32	8	6	11
Retirement Age	(992)	55	11	21	15	1	8
Region							
North East	(587)	53	4	27	10	1	11
South	(1247)	51	6	28	12	5	11
North Central	(937)	47	7	32	9	1	13
West	(457)	55	2	32	9	2	7
Place of Residence							
Metropolitan	(2180)	50	5	32	9	2	11
Non-Metropolitan	(1047)	52	7	24	13	3	12
Person Who Responded							
Family Respondent	(1023)	50	8	16	24	4	12
Self-Respondent	(2205)	51	4	36	4	2	10

* Less than 0.5%.

** Percents add to more than 100% as multiple responses were accepted.

Table 7-18

Foreseen Problems in Using NLS Program or Reasons Why Respondents Would Not Like to Try it by Selected Characteristics of Reading Limitations

	Weighted Sample Size	Life Style/ Not Interested	Too Old or Too Young	Condition Is Not Bad Enough	Condition Is Too Bad	Problems With Components of NLS Service	Need More Information/ Other
		------------------- Percent**					
READING LIMITATION							
Vision							
Difficulty	(1463)	48	3	41	5	1	9
Unable	(1330)	51	8	17	16	3	13
Holding							
Difficulty	(373)	56	3	20	16	5	9
Unable	(269)	37	12	19	24	2	17
Turning							
Difficulty	(291)	53	3	20	17	5	10
Unable	(241)	43	15	12	23	1	16
Sitting Up							
Difficulty	(204)	47	6	14	25	8	6
Unable	(203)	47	14	6	21	2	22
Weakness							
Difficulty	(351)	54	4	30	7	5	11
Unable	(1161)	51	7	21	15	4	11
Learning							
Perception	(731)	49	8	25	9	6	12
Memory/Confusion/ Attention Span	(237)	49	9	16	21	2	9
Mental Retardation + Other	(119	44	2	8	33	20	10
LIMITATION TYPOLOGY							
Single Limitations							
Vision Only	(1098)	51	3	38	7	1	12
Learning Only	(189)	51	6	21	12	6	13
Physical Only	(170)	51	7	30	13	4	13
Multiple Limitations							
Vision & Physical	(874)	57	5	27	9	1	11
Vision & Physical & Learning	(551)	47	8	17	17	8	10
Vision & Learning	(271)	45	8	30	10	5	12
Physical & Learning	(76)	51	*	25	11	6	10
Severity							
Minor	(788)	46	2	48	6	1	5
Moderate	(954)	50	4	32	6	5	12
Severe	(487)	57	6	24	10	1	16
Very Severe	(998)	53	9	14	19	4	12

* Less than 0.5%.

** Percents add to more than 100% as multiple responses were accepted.

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Table 7-19

Foreseen Problems in Using NLS Program or Reasons Why Respondents Would Not Like to Try it by Compounding Limitations

	Weighted Sample Size	Life Style/ Not Interested	Too old Or Too Young	Condition Is Not Bad Enough	Condition Is Too Bad	Problems With Components of NLS Service	Need More Information/ Other
		Percent*					
MPOUNDING LIMITATIONS							
exterity							
Number of Entertainment Media Can Operate Independently							
0 or 1	(238)	44	13	7	35	7	9
2	(517)	56	9	17	16	3	14
3 or 4	(2220)	51	4	33	7	2	11
obility							
No Difficulty	(1684)	51	4	35	6	1	10
Some Difficulty	(295)	50	7	38	4	1	9
Needs Aid or Person	(495)	56	7	23	9	1	13
Confined to House	(544)	50	7	14	22	6	11
Confined to Bed	(168)	38	10	14	31	7	17
eneral Health							
Good	(1586)	51	4	33	7	1	11
Fair	(1148)	50	7	31	10	3	12
Poor	(482)	53	6	15	24	4	9
earing							
No Difficulty	(2321)	49	4	32	8	3	12
Hard of Hearing/Deaf	(907)	50	8	22	16	1	9
peed of Talk on TV and Radio is:							
Too Slow or About Right	(2447)	51	5	31	7	2	12
Too Fast	(439)	49	5	29	16	2	8

Percents add to more than 100% as multiple responses were accepted.

and the percentages cited for the condition "being too bad" go up. A positive attitude toward life as a whole, toward personal health, toward one's limitation, self, and responsibilities/accomplishments are associated with the individual reporting he/she is too busy or his/her condition is not bad enough (see Table 7-20).

However, most of these reasons are related to life style, motivation, activity, disability and health. About one in 20 non-users felt that the program was primarily for the blind, which they were not, but fewer than one in ten respondents noted a particular problem with the NLS program. The implication of this is that the National Library Services' prospects for converting a large number of the non-users into NLS subscribers with its present program are not very good. Of course, we do not know how strong the given reasons are for not trying the program, especially among those who say that they are very interested in trying the program.

What Kinds of Reading Services Are Likely to Increase Reading?

We attempted to assess what kinds of helping services might increase the use of the NLS program. This analysis is shown in Figure 7-19 where we compare the amount of reading done by persons who are not aware of the NLS with that done by persons who are current subscribers with respect to four kinds of help in reading--help in selecting materials; writing away for materials; going to the Post Office to collect or mail materials; and obtaining materials. In order to make this assessment, we posed the question, what kinds of help seem to transform sporadic readers into occasional readers, occasional readers into regular readers, and regular readers into

Table 7-20

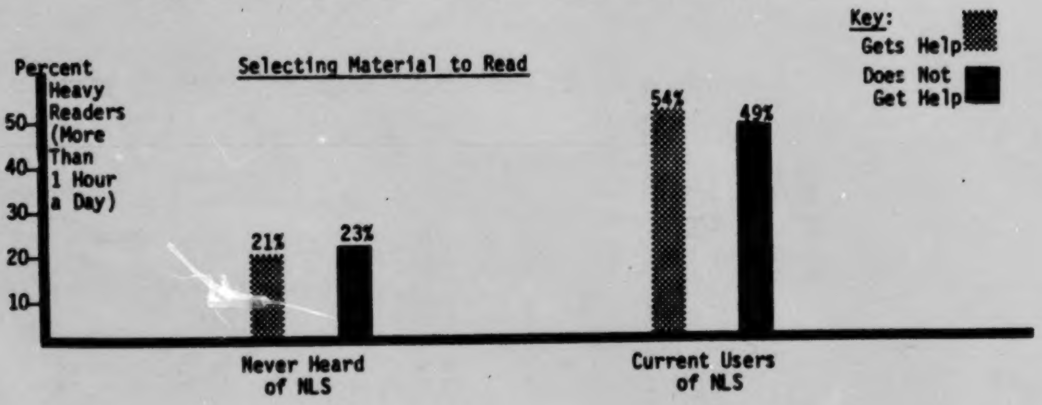
Foreseen Problems in Using NLS Program or Reasons Why Respondents Would Not Like to Try It by Beliefs/Attitudes

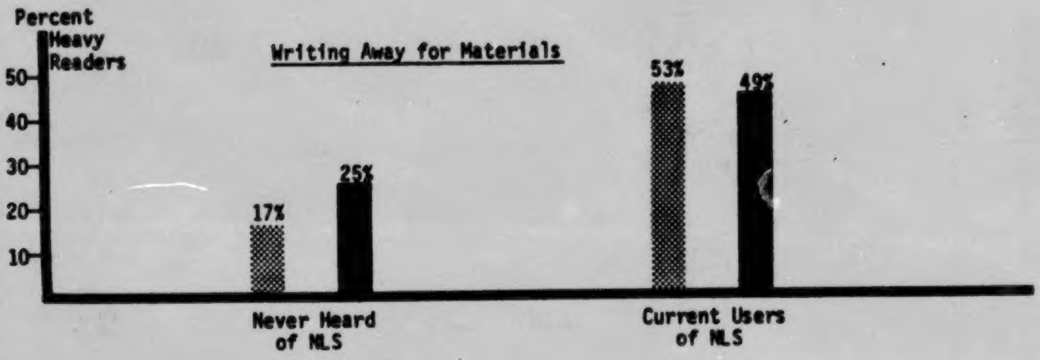
Attitudes Toward	Weighted Sample Size	Life Style/ Not Interested	Age Is Too Old Or Too Young	Condition Is Not Bad Enough	Condition Is Too Bad	Problems With Components of NLS Service	Other
		---------- Percent*	----------	----------	----------	----------	----------
Life As a Whole							
Positive	(890)	51	4	35	4	1	12
Negative	(272)	56	8	18	20	1	9
Personal Health							
Positive	(312)	47	6	23	14	6	10
Negative	(364)	40	8	25	10	4	19
Disability							
Positive	(186)	49	1	36	7	1	17
Negative	(404)	52	4	25	9	12	14
Self							
Positive	(308)	52	7	26	8	4	13
Negative	(254)	55	9	17	20	2	9
Responsibilities/Accomplishments							
Positive	(288)	62	3	28	4	1	11
Negative	(148)	45	5	16	16	19	11

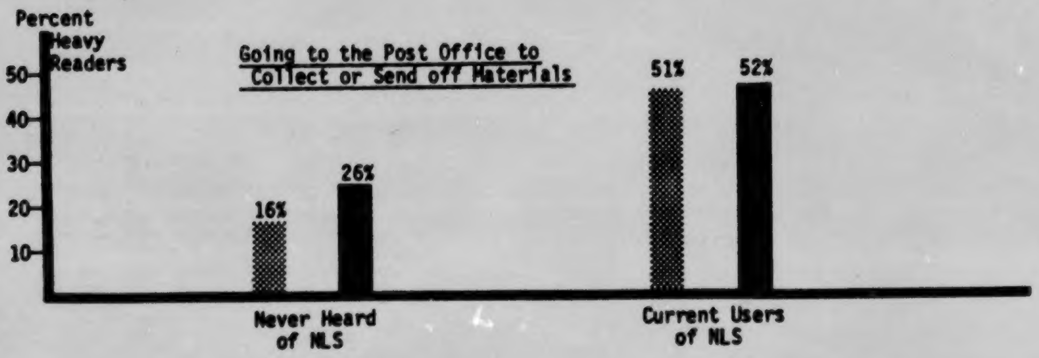
* Percents add to more than 100% as multiple responses were accepted.

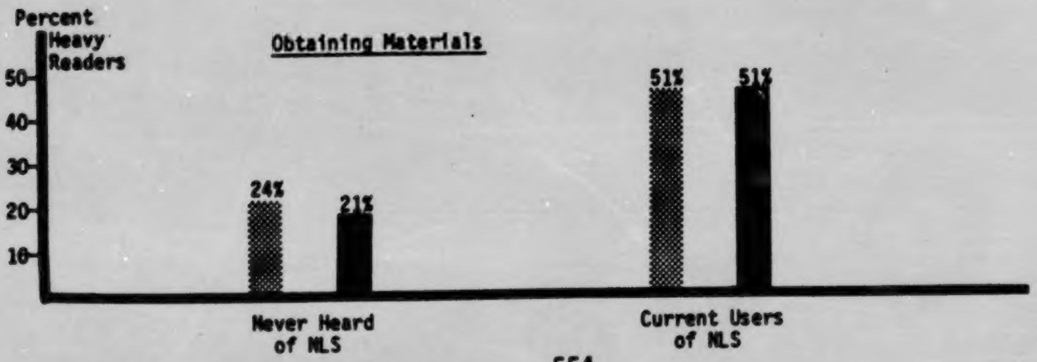
Figure 7-19

Level of Reading Activity for NLS Users and Non-Users Who Receive Help or Do Not Receive Help in Reading


Selecting Material to Read


Writing Away for Materials


Going to the Post Office to Collect or Send off Materials


Obtaining Materials

avid readers?

In examining the specific findings that emerged, it is important to keep in mind that the percentage of NLS users who are heavy readers is twice that of the group of persons who have never heard of the program. The two specific findings that emerged are:

1) For persons who have never heard of the NLS (who comprise the largest of the non-user groups), those who do not get help are slightly heavier readers in three out of four cases. The only instance where getting help seems clearly to result in heavier reading is in actually obtaining materials, which is not necessary for the NLS users since these materials are sent to them.
2) For the current NLS users, those who get help in selecting and writing away for materials are slightly heavier readers; while those who get help in going to the post office and obtaining materials read as heavily as those who do not get help.

These findings suggest that the two most important aspects of the reading process for persons with print limitations are: a) selecting reading materials and making those selections known, and b) actually obtaining reading materials once the choice of what to read has been made.

The first finding reflects both that obtaining reading materials is potentially a difficult task for persons with print limitations, and that this difficulty has been, if not totally eliminated for NLS subscribers, at least reduced, since reading materials are sent from the regional libraries to the subscribers' homes. The second finding tells us that NLS users seem to have difficulty in making selections on the basis of the descriptions provided in Talking Book Topics and Braille Book Review of print alternatives that are available from the regional libraries. And it also tells us that the NLS users appear to have difficulty in picking the selection numbers off the Talking Book Topics discs or out of the Braille Book Review and completing the order form.

It appears, on the basis of the first finding, that one of the main selling points of the NLS program, which perhaps ought to be emphasized in the outreach activities directed at persons in the "Never Heard" segment of the non-user group is the fact that they would not have to go out and obtain reading materials were they to become NLS subscribers since, in most instances, materials are delivered to borrowers. (We have already noted that there appear to be more difficulties in returning books.) It appears that deciding what one would like to read, however, and filling out an order form are both fairly difficult procedures for persons with print limitations. As far as outreach is concerned, the NLS might emphasize that librarians will make selections for subscribers on the basis of their reader profile, should they so wish. In general though, it would be helpful if both of these aspects of using the program were made simpler.

This kind of guide is important for the NLS since it suggests that the most effective way of expanding the amount of reading done by its current audience may be by directing staff dollars and time to services that will: 1) advise subscribers about appropriate reading materials; 2) simplify the ordering procedures; and 3) expand the toll free telephone calling services. Should the Library of Congress be interested in expanding services to persons who have more compounding limitations (poor health, mobility restrictions, hard of hearing), services that will actually bring reading materials to the reader, like bookmobiles, would seem advantageous.

CHAPTER 8

SATISFACTION WITH THE NLS PROGRAM

A. FINDINGS ON CURRENT AND FORMER USERS

This chapter presents findings on the satisfaction with the NLS program from the vantage point of current and former subscribers. The Health and Rehabilitative Library Services Division of the American Library Association (ALA) has addressed many of the same topical issues in their suggested standards for the National Library Service (1978). Many of the ALA's suggested standards are supported by our research.

Our findings pertaining to the satisfaction of current NLS subscribers are quite mixed. While the program is being utilized effectively by particular segments of the population who have physical limitations reading print, there are other groups for whom the service is of little utility. There are many current subscribers for whom the NLS is but one among many fragmented reading services that they utilize, and many more potential subscribers whom the program, as it is now constituted, is not reaching at all. The program is aimed primarily at recreational reading and is much less focused on reading to acquire information.

Those people who read primarily for pleasure and do not have pressing demands for the latest books or articles in their field seem to have relatively few complaints about the availability of materials. However, there are many persons who cannot get sufficiently current or timely materials to keep up with their peers and colleagues, and so must turn elsewhere to get the materials they need.* For example, some professionals utilize the services provided by Recording for the Blind to obtain recorded versions of particular works, and others, as we noted in Chapters 6 and 7, use sighted readers. In addition, with the growth of radio reading services, listeners are able to hear spoken versions of current best-selling books relatively soon after they are published.

There are other segments of the print-limited population who are unable to fully benefit from the services provided by NLS on account of dexterity limitations, learning disabilities, hearing or mobility limitations, or some combination thereof. This stems from the fact that the current NLS equipment is geared primarily to persons who suffer solely from visual limitations, and does not adequately accomodate other physical limitations in using print, hearing, or in health and mobility, despite the fact that persons with physical limitations are eligible for the program. There are still other persons who cannot read print or listen to Talking Books for extended periods of time due to limits in their visual perception, memory or attention span, and who do not have access to materials of a sufficiently short length.

In summation, then, there appear to be two underlying concerns which bear on the satisfaction potential and actual subscribers may derive from the NLS program as it is currently organized. The first of these concerns is that the NLS equipment be designed in such a way as to incorporate such necessary human factor considerations as

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*In contrast to the 40,000 or so print titles that are made available to the general public each year, the 1979-1980 NLS budget allows for the preparation of roughly 2,000 new braille and recorded titles.

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extended listenability, portability, reliability, and most importantly, operability. This is necessary to ensure that the playback equipment can be operated by people who have a minimum of physical strength and dexterity and waning powers of concentration. The second major concern is, of course, that those persons who are able to operate the equipment with minimal difficulty receive materials that meet the range of their reading needs.

At present, the Talking Book and Braille program is an adequate source of recreational/leisure reading for people who are content to read the materials provided by NLS and to supplement their need for specific titles by other means. However, it does not provide adequate services for the professional, the student or the informed lay person who wants information on a particular topic or who wants to keep up with new developments in specialized fields of study, for there are neither braille nor recorded versions of such commonly used research tools as the annual U.S. Almanac, or the Reader's Guide to Periodical Literature. Without these tools, print-limited students and professionals do not have access to general current statistics or particular articles on a given topic that research work demands. Nor does the program satisfy those avid readers who want to read a whole gamut of non-fiction and fiction materials at the same time that those materials are available to the general public. This problem of obtaining timely access to particular research and reading materials persists in spite of the efforts made by some of the better staffed regional libraries to provide research and referral services, and to record or transcribe materials on a custom basis. For typically, NLS titles in braille appear two years after the print versions, and recorded copies are at least a year in arrears.* For example, the March-April 1979 issue of Talking Book Topics lists only a handful of recorded books that were published in print after 1977: four percent (22 out of 565) of the titles in the March-April 1979 issue of Talking Book Topics were published in 1978, 18% were published in 1977, and 78% were published in 1976 or earlier. Finally, although some network libraries have the staff to provide research and referral services and to record or transcribe materials on a custom basis, on the whole these services are not widely used.

USE OF THE NLS PROGRAM

According to our study findings, the NLS Program is now reaching about 11% of its potential target population. Projected nationwide, approximately 300,000 persons residing in U.S. households are presently using the Talking Book and Braille programs: 25% of the subscribers live in the Northeast, 28% live in the South, 30% live in North Central states, and 17% live in the West. About 87% of the current NLS subscribers read only talking books and magazines, 4% use only the braille program, and 9% use both the recorded and braille services provided by NLS. These projections are consistent with data from the central office of NLS indicating that there were 390,000 subscribers as of 1978: the larger NLS figure includes users of deposit collections living in schools, nursing homes, hospitals, rehabilitation centers, etc., as well as persons living at home.

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*Some best-sellers and other popular titles appear on flexible discs as quickly as three months after the printed versions.

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Of the Talking Book users, the majority (90%) presently listen to records, including the flexible disc magazines, and 39% use cassettes.* Though the number of persons listening to (or having) cassette players was less than half that of persons listening to record players as of 1977, this trend is quickly changing as can be seen from the fact that there was a 28% increase in the deployment of cassette players from 1976 to 1977, while the number of persons using records only increased by four percent during that period. Despite the improvements in the cassette players in the past few years, which account for their growing popularity, the biggest stumbling block to their increased use is the fact that the four track cassettes are very confusing for many people, especially elderly subscribers.

In general, use of the program is expanding as can be seen from the fact that 41% of the subscribers have just begun to use the program in the past five years. The fact that 38% of the subscribers have been making use of NLS services for more than five years suggests that once an individual gets accustomed to reading with talking books or braille, and his/her family gets accustomed to providing whatever assistance is necessary in the area of obtaining and operating the equipment, he/she continues to do so. (See Table 8-1 and Appendix Table A8-1.)

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*NLS data show that 63% of the total readership have a record player assigned to them, and 34% have a cassette player.

Table 8-1

Geographical Variation in Length of Time Using NLS Program

	Region				
	Total U.S.	North East	South	North Central	West
	Percent				
Total Usage	100	25	28	30	17
Length of Time Using Program					
Less than 3 Months	6	7	8	4	3
3 Months to 1 Year	15	22	13	13	14
1 to 5 Years	41	39	35	47	43
More than 5 Years	38	32	44	36	40
Total	100	100	100	100	100
Weighted Sample Size	(819)	(204)	(231)	(236)	(148)

Intensity of Use

Of the Talking Book users, half listen to recorded books and magazines at least seven hours a week (an hour a day), and a quarter listen for more than 14 hours a week (two hours a day). But the other quarter of the subscribers to the Talking Book program only listen for three hours a week, or a bit less than half an hour a day. The reading rates for braille users are roughly comparable: a quarter of the users read NLS braille materials for as little as two hours a week (a bit less than 20 minutes a day), half of the users read braille borrowed from their libraries for over 6 hours a week, and a quarter of the braille users read library materials for more than 15 hours a week, or more than two hours a day.

Dependency of Subscribers on NLS Services

In contrast to the general public, few NLS subscribers appear to actually own many recorded or braille books. This may be a function of the free extended loan privileges of NLS or other materials which make it unnecessary for persons to own their own materials, it may be due to the limited availability of braille and recorded materials for personal purchase and the comparatively high costs involved in purchasing commercial recordings, or finally, it may be due to the low demand made by persons with print limitations to retain reading materials for reference and rereading. Braille, as we shall discuss, takes up a great amount of space. But whatever the reasons, the dearth of commercial sources of alternative reading materials creates an obvious dependency on the part of the subscribers on the few established sources of print alternatives that do exist. This dependency may influence the subscribers' comments about the National Library Service either positively or negatively.

While subscribers are extremely happy to have a source of free recorded and braille materials, as shown by their complimentary responses to questions about the NLS service, a great number of persons, when asked about their use of the program, also presented problems and suggested possible ways of improving the service. There were not major differences here between the views of braille readers and those who read with recorded media. Seventy-six percent of the current users of recorded materials offered suggestions for improvements, as did 63% of the users of braille. Sixty-eight percent of the persons who had used the program and then stopped (former users) also offered suggestions. In general, the subscribers seemed to lack a general awareness of what is technologically and economically feasible, and thus were limited in their ability to make constructive criticisms and practical suggestions for program innovations. We have, nevertheless, reported their comments in full, without excluding such recommendations as may be infeasible, so as to preserve the flavor of their remarks, and to represent as accurately as possible all of the problem areas cited.

FORMER USERS

Characteristics

Roughly two and a half percent of the respondents had used the NLS program at some time and then stopped. Projected nationally, the former user group represents 61,000 persons. One-third had not used the program in the past three years, while two-thirds last used the program more than three years ago. Many of the former subscribers reported using the NLS program for a significant period of time: 25% reported that they had used the program over a five year period; 38% had used the program for between one and five years; and 20% had used it for between three months and one year. Only 17% had used it for as little as three months. About 87% had used talking books or magazines, 15% had used braille and 18% had used large print. About a third said that they were very interested in trying the service again. (See Table 8-2.)

Reasons for Terminating Program Use

Reasons for discontinuing use of the NLS program are given in Table 8-3. Nearly three quarters of the former users reported changes in their life styles, attitudes to the program, or motivations for reading generally that contributed to their stopping use of the NLS program: for example, they were no longer interested in reading, they were too busy, they were no longer going to school or working, etc. Ten percent did not want to depend on the program, they did not want to cause anyone any trouble and they did not want charity.

Table 8-2

Characteristics of Former Users of the National Library Service

Number of Persons who had Used NLS Program and Stopped	61,000
Percent of Respondents who Reported they were Former Users	2.3
Weighted Sample Size	(166)

Last Time Used NLS Program	Percent
1-3 Years Ago	32
More than 3 years ago	68
Total	100
Weighted Sample Size	(155)

Length of Period Used Program	Percent
Less than 3 months	17
3 months to 1 year	20
1 to 5 years	38
More than 5 years	25
Total	100
Weighted Sample Size	(108)

Program Element Used	Percent
Talking Books and Magazines	87
Braille	15
Large Print	18
Total	120*
Weighted Sample Size	(166)

Interest in Trying NLS Again	Percent
Very	33
Somewhat	21
Not Very/Not at all	46
Total	100
Weighted Sample Size	(134)

*NLS subscribers often use more than one reading medium.

Half of the users said dissatisfaction with the NLS program contributed to their terminating use of it. Problems with the materials, the equipment, with ordering and receipt, and the need for more information and help were key issues.

And they offered specific suggestions for change, some of which have probably been incorporated into the program since the users' termination. Many of these points, however, were the same ones that were made by current users, which will be reported in the next section. Of the areas in need of improvement, the following were the most frequently mentioned: providing more help in choosing nd ordering selections; improving TBT and BBR descriptions; reducing the shipment of incorrect materials and speeding deliveries; reducing the size, weight and bulkiness of the record players; simplifying the operation of the equipment; improving the speaker and tone fidelity of the record and cassette players; expanding the variety and quantity of talking books and braille; improving the selection of voices for narrators; providing materials of a simpler language and of shorter durations; and providing volunteer help. (See Table 8-3.)

About a quarter of the former users found that they did not like reading by listening or touch and sought other ways to satisfy their informational and recreational needs. For example, some now spend more time listening to the radio and television.*

For about a quarter of the former users, changes in their health or the severity of their reading limitations had occurred: for two

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*For a fuller treatment of the place of reading, radio and television as leisure activities in the general population and that with print limitations, see Chapter 5.

Table 8-3

Reasons For No Longer Using Talking Book And Braille Program*

Reason	Percent of Persons Giving Reason**		
1. Attitude/Life Style			71%
Too busy/don't have time/too many other activities	19		
Not interested in books/dislike reading/never was a reader	17		
Too independent/don't want depend on it/can get along without it/ don't want charity/don't want to cause anyone trouble	10		
Depressed by/resentful of/poor attitude toward physical disability or poor health	10		
No longer need service since school activity/work activity ceased	9		
Don't want the responsibilities/might lose, damage or break the equipment	3		
Program is too much trouble/not worth the time and effort	3		
2. Problem With NLS Program			49%
Materials		20%	
Unsatisfactory content--too simple, difficult, long, short, conservative, vulgar	10		
Poor quality of materials--don't like the readers' voices, too monotonous	6		
Not enough selections of interest	4		
Ordering, Receiving		11%	
Equipment		11%	
Operating machines, materials	8		
Maintaining machines	3		
Need More Information		4%	
Need Help		3%	
3. Reading Preferences			24%
Dislike recordings	9		
Prefer radio or television	7		
Prefer regular print or large print, pictures, optacon	6		
Get read to by family members or someone else	2		
4. Health or Condition Has Deteriorated/Too Tired, Weak, Ill, In Pain/ Can't Understand, Remember, Concentrate, Sit Still/Too Nervous, Overwrought, Impatient			15%
5. Health or Condition Has Improved/ Is Not Poor Enough/Don't Want to Use it Till I Really Need it			8%

*Based on a Weighted Sample Size of 166.

**Percents add up to more than 100% as multiple reasons were accepted.

out of three their condition had deteriorated. They felt too tired, weak, ill or in too much pain to read. Others said that they no longer could concentrate, remember, or sit quietly; still others said that they were too nervous and impatient to use the Talking Book equipment or braille.

B. SATISFACTION WITH THE TALKING BOOK AND BRAILLE PROGRAMS

In this section, various aspects of using the Talking Book and Braille programs which presented problems for both the current and the former NLS subscribers will be discussed along with suggestions for their improvement. The general issue of satisfaction has been subdivided into the following categories:

1. Selection - Choosing and Ordering Materials;
2. Accessibility - Receiving and Returning Materials;
3. Manageability - Storing and Handling Materials;
4. Operation - Facility in Using the Equipment;
5. Maintenance - Repairing and/or Exchanging the Equipment; and
6. Quality - Quantity and Content of Available Materials.

Within each of these categories we have ranked the specific problems mentioned as either a "very high" concern, a "high" concern, a "medium" concern, a "low" concern or a "very low" concern. These rankings were arrived at by comparing the number of persons who indicated having problems or offered suggestions for each of the various aspects of the service.* Sixty percent of the current NLS users and 68% of the former subscribers pointed to possible problem areas.

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*In general, our guidelines were: very high--greater than 30% commented on a problem; high--between 20% and 30%; medium--between 10% and 20%; low--between 5% and 10%; and very low--less than 5% commented on a given problem area.

We have also given an overview of the most salient features of the program in need of improvement on the basis of the comments made by the subscribers. Both the problems and the proposed solutions made by the subscribers were generally supported by our findings on utilization of the NLS program in nursing homes and other health care facilities (see Volume 3) and our interviews with regional librarians (see Volume 4). Additionally, we have tried to point out some of the possible ramifications for the NLS program generally which these problem areas present given the demographic, social and health/disability characteristics of the respondents. In our summaries of each of the problem areas, we have tried to incorporate suggestions based both on the comments made by the users and our understanding of the needs of the non-users, so that should the NLS seek to expand its services to the latter group, it will have some guidelines for doing so. As we pointed out in Chapter 7, there are significant differences between the users and the non-users with respect to the number and severity of their print limitations. Thus, their needs, and, in turn, the appropriate improvements, may diverge in some areas.

In reviewing the comments made by the NLS subscribers and our summaries of the main points, it is important to keep in mind that the NLS program is not the only service that provides materials for persons with reading limitations. And thus, while there will be some areas in which the NLS program is quite adequate and others in which it is less so, there may be other agencies which are already taking up the slack.

The responsibility of satisfying all of the needs of the diverse group of persons with reading limitations is an enormous one, and it would be asking too much to expect the NLS program to assume all of it.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: SELECTION - CHOOSING & ORDERING MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS — OVERALL RANK

A. Choosing and Ordering Reading Materials Independently — MEDIUM CONCERN

Problem--Getting the assistance of someone in one's home or a librarian to provide help in things like getting the correct order numbers off the TBT records, and in filling out the order forms once one knows what selections one wants.

Reader Suggestions--Provide more volunteers, more library staff, a wider availability of toll free telephone services to call libraries, more direct contact with reader advisors; clarify ordering instructions so that subscribers know that order forms can be mailed "free matter for the blind and physically handicapped"; and utilize an easier number system for ordering the selections.

B. Obtaining and Using Existing Information on New Selections to Make Choices — MEDIUM-LOW CONCERN

1. Problem--Obtaining Talking Book Topics (TBT)--a bimonthly publication that provides short annotations and order information about current selections, and which is available in print and on record -- from NLS and other sources.

   Reader Suggestions--Provide all subscribers--especially new subscribers--with TBT automatically, and provide better follow-up on requests for TBT.

2. Problem--Getting adequate information from TBT to decide if one wants a selection, if the reading material is too long or too difficult, or if it is too difficult to listen to the narrator.

OVERALL RANK

Reader Suggestions--Provide more specific and in-depth descriptions, short excerpts from the actual text, and short samples of recorded narration; a rating of the difficulty and concentration required, the level of the language, and prior familiarity with material required; and organize TBT by subject area within the broad headings of adult and children's fiction and non-fiction.

3. Problem--Getting sufficiently frequent and up-to-date information.

Reader Suggestions--Publish TBT every month instead of every other, or provide alternative sources of information about new selections, such as newsletters from regional libraries.

4. Problem--Finding materials for research endeavors. This is a big problem for NLS users. Though it is possible to get print outs from the central office of NLS, there are no generally available and completely up-to-date cumulative listings of all NLS recorded materials, such as a recorded guide to periodical literature or a readily accessible single cumulative listing of non-fiction materials.

Reader Suggestions--Provide cumulative listings and guides to periodical literature, so that subscribers will not have to rely upon others so much in pursuing their research interests. This will also enable librarians to devote more time to their other responsibilities.

C. Ordering Materials Once User has Made His/Her Choice — LOW CONCERN

1. Problem--Getting requests mailed by those who are unable to mail them themselves, and who cannot rely upon the assistance of others.

Reader Suggestions--Provide subscribers with order forms preaddressed to regional libraries, or with press type labels to facilitate ordering by mail, and to make sure order forms get sent back to the right place.

II. Summary and Assessment of Problems

The overriding concern in the area of selecting and obtaining materials is that the Talking Book users receive the assistance they need to find out about and obtain reading materials adequate to their needs. The many channels available to the normally sighted person, such as reading reviews, seeing advertisements, browsing in book stores and libraries, etc. are not open to print-limited persons. Consequently, there must be alternate sources of information on reading materials that provide the variety and relative ease of access that are available for persons without reading limitations. Book mobiles might be used to great advantage here, as might toll free telephone services to libraries, which are currently being expanded in some states, but might be utilized more generally.

In addition, there needs to be a means of obtaining materials without having to rely on a member of one's household to help decide what one is interested in reading, and when it can be read. Though the Talking Book Topics users were generally positive about TBT (90% of the TBT users said that TBT descriptions were accurate and provided sufficient information to decide whether or not to order a selection, and 73% said that it provided adequate information on the length and difficulty of selections), a third of the users prefer to have a librarian order for them, and a quarter have someone else order for them. More of the Talking Book users might feel confident about ordering by themselves if the descriptions were more explicit regarding the length and difficulty of the selections, and if it were somehow made easier for the Talking Book users to fill out the order form itself.

One of the recommendations for increasing the ease of using TBT to make selections was to index the listings by topic. Though the listings of the new selections presented in the bimonthly publications are not currently organized by topic, the selections presented in the cumulative listings--which come out every two years--are so organized, and present a fairly wide range of selections to choose from. In addition, the regional libraries maintain catalogs of all the available recordings and braille materials, and the libraries where they are stocked to facilitate answering requests through interlibrary loans.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: ACCESSIBILITY - RECEIVING & RETURNING MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS

OVERALL RANK

A. Receiving and Returning Materials Independently

HIGH CONCERN

Problem--Getting to a post office to pick up and return oversized reading materials that do not fit in mail boxes.

Reader Suggestions--Organize a volunteer network to pick up and deliver reading materials and equipment, or utilize book mobiles.

B. Lack of Sufficient Care in Shipping Materials

1. Problem--NLS subscribers complained of receiving the wrong record of a multi-record set, of not receiving all of the records in a set, and of receiving damaged or unusable records.

HIGH-MEDIUM CONCERN

Reader Suggestions--Check all of the materials (i.e., the contents of all TB shipping cartons), before they are sent from the library to the next borrower.

2. Problem--Materials for Talking Book users sometimes arrive in either damaged or poor condition: this is a more serious problem for record users than it is for cassette users, because the thin discs on which magazines are recorded are often folded up in order to be fit into mail boxes.

Reader Suggestions--Check the condition of records and cassettes before they are shipped to subscribers; find a better way of packaging the records to prevent damage in shipping--by putting stiffening on the outside of all thin disc magazines, for example, it would be impossible to fold them up; or produce more durable records in the first place.

OVERALL
RANK

C. Unreasonable Delays in Receipt of Services

MEDIUM
CONCERN

1. Problem--Since equipment and talking books are usually shipped "free matter for the blind and physically handicapped" delays of up to a month are fairly frequent, and occasionally (though not frequently) range up to as long as three months.

   Reader Suggestions--Build up a stock of titles in libraries so that Talking Book users do not have to wait for a particular title to be returned to the library, and revise postal priorities so that "free matter for the blind and physically handicapped" is not a low priority.

2. Problem--Talking Book users are sometimes frustrated due to misplaced, incorrect shipments.

   Reader Suggestions--Again, get the postal service to place a greater priority on the delivery of equipment and alternative reading materials.

II. Summary and Assessment of Problems

Overall most of the respondents did not feel that the usual waiting time for receipt of Talking Book materials was unsatisfactory, unless they really needed a particular item at a set time. But it is, of course, much longer than the immediate selection and receipt of materials that able-bodied persons enjoy at a local public library. According to the respondents' answers to our questions, it appears that 20-30% of the orders are serviced and the materials received within one week from the time they were ordered, 45-65% of the orders are received within one to two weeks, and 10-25% of them take longer than two weeks, and sometimes as long as several months. However, there is reason to think on the basis of conversations with regional librarians that these data represent an underestimate and that the actual waiting time is typically closer to two to four weeks. Additionally, though the waiting time is not unduly long for the receipt of reading materials, there are occasionally some long delays in initially obtaining a NLS record or cassette player and in beginning to receive TBT on a regular basis. In both instances the waiting times range from one month for the majority of Talking Book users (75%) to three months for some users.

Although the issue of receiving and returning materials is not as high a concern as some of the other issues, it is clear that there is nothing so frustrating as getting excited about an activity and then being delayed for a substantial length of time. The initial enthusiasm one feels about the activity may dissipate long before one receives the requested reading material, or be redirected to another more accessible activity. By ameliorating the shipping and servicing of materials and equipment to persons with reading limitations, reading may become a more sustaining activity for many persons.

One thing that almost seems to go without saying, and yet which seems not to be fully appreciated is that the success of the NLS program depends in large measure on the cooperation of the postal service. The timely receipt of materials, their arrival in damaged or in good condition, and the subscriber's success in enlisting the help of his/her mailman in carrying unwieldy equipment and reading materials all turn on the postal services' willingness to help, and yet at present the postal service has no formal part in the operation or planning of the program. It would seem that many of the obstacles that now interfere with the smooth operation of the program might be eliminated if this situation were rectified.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: MANAGEABILITY - STORING & HANDLING MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS

OVERALL RANK

A. Storing and Handling Reading Materials Independently

MEDIUM CONCERN

Problem--Getting assistance storing and handling reading materials and equipment. This problem is more severe for users of record players than cassette users.

Reader Suggestions--Provide volunteers to assist in both the users' homes and in libraries.

B. Large, Bulky, Awkward Equipment

MEDIUM CONCERN

Problem--The unmanageable size, bulk and weight of the NLS record players prevents Talking Book users from using them comfortably and independently. Neither the record player nor the cassette player is deemed small enough or light enough to be portable. Though there have been improvements in amplification, 1970 was the last time that the case models were revised.

Reader Suggestions--Model the Talking Book record and cassette players on commercially available players, which can be made at roughly a quarter of the size of the NLS device. The newest NLS record player, Model No. A-78, is 14½" wide x 12" long x 8" high and weighs 12 pounds, while the newest cassette player, Model No. C-77 is 9" wide x 11" long x 3" high and weighs five pounds. Many commercial record and cassette players are two-five times as small and light.

C. Finding Storage Space for the Equipment

LOW CONCERN

Problem--Some readers lack the adequate space or storage racks for the large bulky equipment: this problem, like the problem of handling and using materials independently, affects the users of record players more than it does the cassette users.

OVERALL RANK

Reader Suggestions--Again, by reducing the size and weight of the NLS players, those persons who have limited space in their homes would have less difficulty storing the equipment.

D. Alternate Types of Record Players

LOW CONCERN

Problem--Most of the NLS record players distributed in the United States can only be operated on alternating current, in contrast to cassette players which are available in battery-operated and alternating current models.*

Reader Suggestions--Make record players that incorporate battery operation and AC power more widely available.

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*In areas where there is limited electricity, the NLS makes available a battery-operated record player.

II. Summary and Assessment of Problems

The primary concern in the area of managing the NLS reading equipment is that persons with reading limitations often have limited strength and dexterity as well, and consequently, they may have regular accidents with the NLS equipment. Given their susceptibility to accidents, and their general tendency to treat the equipment "pretty hard" the equipment has to be rugged. The unfortunate concomitant of making the devices sturdy enough to withstand rough treatment is that the machines are also heavy and bulky. Ironically, it is the unwieldiness of the machines, which is, in part, responsible for the accidents in the first place.

The unmanageable size, bulk and weight of the record players was one of the top three problems cited by Talking Book users. Obviously, this problem of unmanageability ranks as a high concern in the overall ranking of problem areas needing improvement. Unless the machines are made so that they may comfortably and enjoyably be used, handled and stored by persons with reading limitations, many persons with severe compounding limitations may be less inclined to go through what could be something of an ordeal for them in order to read independently.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: OPERATION - FACILITY IN USING THE EQUIPMENT

I. Problems Cited and Solutions Suggested by Subscribers to NLS — OVERALL RANK

A. Speaker and Tone Quality/Quality of Narration — HIGH CONCERN

1. Problem--The poor tone quality and sound fidelity of the record players was pointed to by many record users, especially those persons (25% of the disc users) who have compounding hearing problems and, therefore, need greater fidelity and better distortion-free amplification just to hear at all, let alone to be able to listen enjoyably for extended periods of time.

   Reader Suggestions--Improve speaker quality and add tone adjustments.

2. Problem--Record player needles break too easily and have to be replaced too often.

   Reader Suggestions--Make more durable needles that will ensure the continued high fidelity of the recordings; design a foolproof, easy way to replace the needle.

3. Problem--Some of the Talking Book users (though not many) found the recordings using a single voice a bit monotonous, and some found the narrators difficult to understand, "too British" and "stodgy," in spite of the fact that NLS utilizes alternating voices on some of the recorded magazines.

   Reader Suggestions--Utilize more than one voice for a given book or magazine and sound effects; select readers more carefully so that the voice better matches the subject.

B. Independent Operation of Record Players*

1. Problem--Getting the needed assistance in operating the NLS record and cassette players: this problem is particularly pressing for elderly persons handicapped by more severe dexterity limitations.

   Reader Suggestions--Enlist more volunteers to assist in users' homes and in libraries.

2. Problem--Apart from the A-78 model of the record player, which has an automatic shut off mechanism, the record players are completely manually operated, which presents difficulties for many Talking Book record users.

   Reader Suggestions--Devise a machine that can be operated automatically, so that user doesn't have to put the needle on the record in order to start it. In spite of the guide on many machine models which aid one in placing the needle in the right place, this is still a problem for many persons.

3. Problem--Only one record may be put on the player at a time, making it necessary for the user to change the record every 88 minutes: this is both a nuisance and a difficult task for persons with dexterity limitations.

   Reader Suggestions--Make the NLS record players in such a way that, like the commercial players, it is possible to stack the records. Redesign the equipment to require a minimum of dexterity.

C. Independent Operation of Cassette Players*

MEDIUM
CONCERN

Problem--The complexity of cassette players, arising from the high number of control buttons, was the most problematic feature of the cassette players for many persons. Operation of the four track cassette players was confusing for many older persons.

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*Although we have ranked the issue of the independent operation of record and cassette players as a medium concern, on the basis of the percent of NLS users who found this to be a problematic area, we feel that this issue is, in fact, one of high concern. The reason being that, as we saw in Chapter 7, there is a significantly higher proportion of non-users who have severe dexterity problems than users. Further, interviews with non-users in nursing homes and telephone interviews indicated that they required assistance in operating these machines. Thus, it is neither surprising that among the user group, where the prevalence of severe dexterity limitations is not so high, the independent operation of players was not a major concern, nor does it imply that it is not an area which requires much attention. For many of the current non-users might well be users if either they had regular assistance in utilizing the NLS equipment, or if the machines were simpler to operate.

Reader Suggestions--Redesign the cassette players to have fewer controls and ones that are more pressure sensitive; develop a simpler four tract operation; provide extensive training sessions for the cassette users to ensure their facility with the machines; and provide more volunteers.

D. Compatibility of Talking Book Record Players & Recordings with Non-NLS Equipment and Records

MEDIUM CONCERN

Problem--Many Talking Book users were upset by the fact that the Talking Book records cannot be used on non-NLS machines, due to the fact that they are generally recorded to play back at 8 1/3 rpms, which is incompatible with commercial record players which play back at 33 1/3 and 45 rpms. (NLS records are recorded at 8 1/3 rpms in order to reduce the number of records needed per book.) Non-NLS records, similarly, cannot be used with NLS machines due to the fact that the NLS machines do not operate at all at 45 rpms, and do not play records recorded at 33 rpms with any fidelity, though the NLS machines can be operated at 33 rpms.

Reader Suggestions--Find another way, if possible, of condensing the number of records required per book or magazine that does not render all but the few old 33 rpm NLS records incompatible with non-NLS machines, and conversely, does not prevent the use of commercial records (barring again the 33 rpm records) with the NLS machines.

E. Restrictive Capabilities of NLS Cassette Players

MEDIUM CONCERN

Problem--According to the current NLS mandate, NLS cassette players can only be used for playback; they cannot be used for recording. Consequently, a regular cassette users must carry around two machines--one for recording purposes and one for reading with Talking Books, or forego the possibility of using Talking Books during his/her spare time or on the job.

Reader Suggestions--Create an NLS cassette player that can be used to record, since the NLS cassette player can be used with commercial tapes simply by using a speed control adjustment, unlike the NLS record player.*

F. Indexing

MEDIUM CONCERN

Problem--Finding one's place in the middle of a record is a frequently mentioned problem. (Indexing is not as serious a problem for cassette users because the cassette players have "fast forward" and "fast reverse" controls.)

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*Creating such a cassette player would involve changing both the legal mandate the NLS now operates under and the orientation of the program; the NLS materials and equipment are not intended for rehabilitation use at this time. Such a shift might be highly desirable though.

OVERALL
RANK

Reader Suggestions--Design NLS record players or prepare recordings with some mechanism, comparable to the tone-indexing currently utilized in Talking Book Topics, which indicates the reading place--that is, how many pages (or minutes) into the book the reader is--every couple of pages or so.

G. Durability of Records and Cassettes — MEDIUM CONCERN

Problem--Talking Book users are unhappy about how easily the records scratch, and how readily the cassettes skip, tangle and wind up improperly.

Reader Suggestions--Utilize new materials in the production of records to make them more durable; devise a new way of winding the tapes in the cassettes that will minimize the skipping and tangling.

H. Speed of Speech on Records — LOW CONCERN

Problem--Unlike the new cassette players, which are equipped with speech compressor-expanders to vary the speed of normal speech in accord with one's aural reading capabilities, record players cannot be adjusted to either speed up or slow down the speech. Consequently, persons who can absorb speech at faster rates than normal speech must slow down their reading process, while those who require slower speeds may miss some of the material, or absorb less than they otherwise could.

Reader Suggestions--Design and provide record players which have speech control devices built into the machine itself, rather than providing them as separate accessories which the user can get only by making a special personal purchase.

II. Summary and Assessment of Problems

Since the fidelity and enjoyment of the speech output of record and cassette players is a function of the weakest design element, it is imperative to ensure that each component of the equipment is of superior design and construction, and is in sound working order when the machines are distributed. Clearly, the more shortcomings there are with the machines, the less likely it is that they will satisfy the needs they have been provided to satisfy.

The primary concern in the area of operating and using the NLS equipment is, as it was in the area of storing and handling the materials, that many of the users have strength, dexterity and mobility limitations in addition to their reading limitations. Additionally, over half have endurance problems and difficulties in sitting up, and a quarter have hearing limitations. These limitations obviously make it difficult for users to operate the machines independently. The fact that the record players can only be operated manually, and that records must be changed more frequently than is desirable are both high concerns in the overall ranking of problem areas. The complexity of the cassette players is also troublesome for many people. The other areas of high concern are: the incompatibility of NLS machines and records with non-NLS records and record players, respectively; the relatively limited uses of the NLS cassette players; and the tone and quality of the speakers, which affect the pleasure derived from and the ease of listening to Talking Books, which in turn affect the amount of reading the NLS users will do.

It would seem to be incumbent on NLS to perform studies that will measure the specific functional capacities of the entire target population and then utilize the study results to design new equipment appropriate to those capacities. Present commercial designs are not adequate to the needs of all persons with print limitations. Research and development grants from NLS would be one good step in this direction. A portable record player that is lightweight, plays in any position, in which the user can simply drop a record in a slot is one design possibility.

On the brighter side, the problem areas which were only of medium or low concern were: indexing, the speed of speech on the recordings, and the quality of narration on the recordings. The possible problem areas which were of very low or no concern at all were: the adequacy of instructions on how to operate the NLS equipment and the distinguishability of the control buttons on the cassette players. On the whole, the NLS subscribers were quite complimentary about the voices, expressiveness and the accents of the readers, but for some too much inflection was a concern. A further strongpoint is the variable speed control which has been incorporated into the new cassette players so that the speed of speech may be adapted to each individual's reading needs.

Thus, while there are still drawbacks to the Talking Books, they are certainly accepted as a very viable alternative to braille and moon type, which are unavailable to many persons with reading limitations.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: MAINTENANCE - REPAIRING and/or EXCHANGING THE EQUIPMENT

I. Problems Cited and Solutions Suggested by Subscribers to NLS

OVERALL RANK

A. Repairing the Equipment Independently

MEDIUM CONCERN

Problem--Getting the assistance of someone to either repair the broken equipment, or to help send it back to NLS or to a repair shop.*

Reader Suggestions--Provide explicit instructions on how to repair simple machine problems that are likely to need regular maintenance or require replacement (such as record player needles), that are readily fixed, and which the NLS user might do by him/herself.

B. Length of Time Required for Repairs

MEDIUM-LOW CONCERN

Problem--Though in some cases it is possible for the libraries to exchange the equipment or provide a temporary substitute for the damaged equipment while it is being repaired, for the most part, the length of time it takes for repairs is an inconvenience.

Reader Suggestions--Offer repair services in the local libraries for the NLS users, train more people to perform these services; provide more machines to replace the broken ones while they are being repaired, as is now done in some instances; and provide volunteers to collect machines from subscribers' homes or repair them within the home.

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*Maintenance of equipment is usually performed by the machine-lending agencies throughout the country, with actual repair handled largely as a volunteer activity performed by the Telephone Pioneers. (See Volume 4 for details.)

II. Summary and Assessment of Problems

Getting the needed assistance in maintaining, exchanging and returning the equipment and reading materials is a serious problem for the subscribers to NLS. Happily though, most subscribers are provided with adequate information on what to do, whom to contact, and so on, in the event that a repair is necessary, and when the equipment is actually fixed, it is done so satisfactorily. And further, as was mentioned before, in the cases where the damaged machines can either be exchanged or temporarily substituted while the repairs are being made, the waiting time has been greatly reduced.

However, for the subscribers who borrow reading materials from libraries which have a limited supply of extra machines to loan out while the users regular machines are being repaired, and which do not have enough people trained to make these repairs, the waiting time may still be a problem. Clearly, the longer Talking Book users are detained from reading, while waiting for repairs to get made, the more likely it is that they will seek substitute activities, which may continue to fill the time that reading occupied, even after their machines have been repaired. On the whole, the problem of maintaining and repairing equipment is not a very serious concern in the overall ranking of problem areas. But some reorganizing might still be done to minimize the delays.

SATISFACTION WITH THE TALKING BOOK PROGRAM

ISSUE: QUALITY - QUALITY & CONTENT OF AVAILABLE MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS

OVERALL RANK

A. Variety of Selections

HIGH-MEDIUM CONCERN

Problem--A fair number of subscribers found that there was a paucity of reading materials in the arts--requests were made for more works on painting, drawing, sculpture, music, photography, cinema, and theatre--in the sciences, and in popular culture items such as cartoons and comic books, and in many other areas. More informational works were desired as well as more religious materials.*

Reader Suggestions--Provide more regular reader input into the process of title selection through panels or surveys, and make available the results of the survey to the NLS subscribers.

B. Quantity of Selections

HIGH-MEDIUM CONCERN

Problem--Many subscribers view the quantity of titles as too limited. In some cases (though not in most) subscribers have to wait for a particular item to be returned to the library before they can read it, because there are not enough copies available either at the library itself or at the multi-state back-up center.

Reader Suggestions--Provide duplication facilities at the regional and subregional libraries; retain at least one copy of each selection on hand for duplication purposes only.

C. Currency of Selections

MEDIUM CONCERN

Problem--It sometimes takes over a year or two for current works like best sellers in print to be recorded and put out in Talking Books. This time lag makes it difficult for NLS subscribers to keep up, and discuss books with able-bodied friends.

Reader Suggestions--Speed up the review and production process, provide more regular and frequent reader input on best seller books and magazine interests.

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*Of course, it is not clear whether subscribers were fully knowledgeable about all of the available materials; for example, materials obtainable through interlibrary loan.

OVERALL
RANK

D. Degree of Difficulty of Materials — MEDIUM CONCERN

Problem--Roughly 20% of the subscribers found the language of the recorded materials too difficult.

Reader Suggestions--Supply a wider range of reading materials, especially high interest, low vocabulary materials to meet the reading interests and needs of a more diverse audience, some of whom are slowing down in mental alertness.

E. Length of Materials — MEDIUM CONCERN

Problem--Over half of the respondents who read say that they are reading shorter pieces. Shorter stories were requested by many people, though not by as many as those who wanted simpler, lower vocabulary level pieces.

Reader Suggestions--Provide more short stories and magazine articles.

II. Summary and Assessment of Problems

There is little question that it is far more difficult to absorb materials by listening than it is by reading the printed page, where one can pore over the page as long as necessary, and go back and see how different sentences and thoughts relate to one another. Given this added burden for persons with reading limitations, it is essential that the complexity of the language--i.e., the length of sentences measured by syllables and the degree of difficulty of the words--be carefully considered when selecting the materials to be recorded, and deciding how they ought to be narrated. The need for high interest, low vocabulary reading materials cannot be overemphasized: if the material is too difficult or wordy the Talking Book users will be frustrated, and possibly even abandon reading for other more relaxing activities. The same might be said for the length of selections, given the shorter attention spans of some of the older readers. It seems appropriate that experts in reading limitations should be involved in the selection process.

Perhaps by excerpting parts of the texts in Talking Book Topics, the subscribers could get a better sense of the length and difficulty of the selections. Similarly, if the topical interests of the subscribers are not met, they will be less inclined to utilize the

NLS services.*

Another way of alleviating the problem which a high percentage of the subscribers had with the length of the reading selections, and of simultaneously ensuring that the selections are sufficiently current, would be to provide records and cassettes of the most popular magazines. In the March-April 1979 listing of magazines that are available in Talking Books, ten out of sixty of the most widely read magazines were available. While most of the areas of wide appeal (Home and Homemaking, Fashion and Style, News and Commentary, Sports and Business) were covered by at least one magazine, it wouldn't hurt to publish more of these magazines in Talking Book form, to cover a wider range of perspectives. Special topics like running a business out of one's home, operating a ham radio, or doing craft work are in demand and require more attention. There also appears to be a demand for more selections in every language--not just the most widely-spoken tongues, and for more dramatized plays.

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* According to 16 regional librarians, 31% of the adult and 6% of the adolescent subscribers would like to see more high interest/low vocabulary level books, 25% would like more dramatic materials, 13% would like more non-violent/non-sex books and stories, 6% of the subscribers would like less conservative materials, 6% would like more "non-dramatic" titles, and 6% would like more preschool and children's materials. Ten librarians noted that their readers would like to see more religious/inspirational works (19%), more westerns (13%), more gothic romances (13%), more non-gothic romances (6%), more biographies (6%), and more how-to and home gardening books (6%). And finally, fourteen regional librarians mentioned that 25% of the readers would like more books in Spanish, 13% would like more French titles to choose from, 13% would like to see books in various of the American Indian dialects, 6% would like to see more German books, 6% would like more general materials on languages, and 6% would like more how-to-speak-English books. For all of these interests cited above, the totals may add up to more than 100% because the librarians may have given more than one response.

On the whole though, the subscribers were generally content with the selections that were available. Thus, the quality of available reading materials is only of medium concern in the overall ranking of problem areas.

SATISFACTION WITH THE BRAILLE PROGRAM

ISSUE: SELECTION - CHOOSING & ORDERING MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS

OVERALL RANK

A. Obtaining & Using Existing Information on Braille Selections to Make Choices

HIGH-MEDIUM CUNCERN

1. Problem--Obtaining Braille Book Review (BBR)--a bimonthly periodical which presents short descriptions of and ordering information about current selections, and is available in both braille and regular print--from NLS and other sources.

Reader Suggestions--Provide all subscribers--old and new alike--with BBR automatically, and provide better follow-up on requests for BBR.

2. Problem--Getting adequate information from BBR to decide if one wants a selection, and if the material is too difficult or too long. Some braille users mentioned ordering books on the basis of the descriptions, and then finding that the books have little to do with the descriptions.

Reader Suggestions--Provide better, more accurate, informative and in-depth descriptions, as well as a rating of the concentration and prior familiarity with the material (if any) required, and the level of the language.

3. Problem--Finding materials for research endeavors is a big problem for NLS users. Though it is posssible to get computer listings and other needed search assistance from the central office of NLS, there are no generally available and completely up-to-date cumulative listings of all of the available braille materials, such as a braille guide to periodical literature or a readily accessible single cumulative listing of non-fiction materials.

Reader Suggestions--Provide cumulative listings and guides to periodical literature, so that subscribers do not have to rely upon others, such as paid sighted readers or librarians with limited time, to pursue their research interests.

OVERALL
RANK

B. Choosing & Ordering Braille Materials Independently

MEDIUM-
LOW
CONCERN

Problem--Getting adequate assistance ordering titles is a frequently mentioned concern of braille users.

Reader Suggestions--Provide more volunteers, more library staff, wider availability of toll free telephone services and more direct contact with reader advisors.

C. Ordering Materials Once the BBR User has Made His/Her Choice

VERY LOW
CONCERN

Problem--Some (though not many) of the braille users had difficulty addressing their requests to the regional libraries.

Reader Suggestions--Provide preaddressed envelopes, in addition to the order forms that are already provided.

II. Summary and Assessment of Problems

A principal concern in the area of selecting and obtaining reading materials for braille users is, as it was for Talking Book users, that they receive the assistance they need/desire to both find out about and acquire reading materials appropriate to their needs. As already noted, this relatively simple activity for the general public is far more problematic for the visually impaired person who is cut off from the regular networks of information. Finding informational materials is a serious concern.

Roughly a third of the NLS subscribers who use braille rely on a librarian to select titles for them, and another quarter have someone else order for them. (These figures are comparable to those for Talking Book users.) Here, as with the users of Talking Books, the number of persons who, for whatever reasons, feel more comfortable having someone else select and/or order books and magazines for them might be reduced if the descriptions in BBR gave more information on the length and difficulty of the available selections. On the other hand, it may simply be that not enough persons are receiving BBR, or reading it once they do receive it: the number of persons who read BBR regularly (48%) correspond more or less to the number of persons who do select and order materials independently (40%).

Of the NLS subscribers who do read BBR, 90% said that the descriptions are accurate and provide enough information to decide whether to order a selection or not, while 72% said that they provide sufficient information about the length and difficulty of the pieces. The descriptions of the selections for children and young adults indicate the age group to which the book is geared, but there is not a comparable ranking of books for the adult selections. Though it may be more difficult to rate the latter books in terms of interest, vocabulary level and degree of prior familiarity with subject area required, clearly it would be beneficial to do so. Unlike persons in the general population who have the luxury of perusing books in libraries and bookstores to determine the level of difficulty of the reading materials, persons with print limitations cannot do so. Hence, such rankings might be helpful.

SATISFACTION WITH THE BRAILLE PROGRAM

ISSUE: ACCESSIBILITY & FACILITY - RECEIVING, RETURNING, STORING & HANDLING MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS	OVERALL RANK
A. Unreasonable Delays in the Receipt of Materials	HIGH CONCERN

1. Problem--As with the Talking Books, braille materials are shipped "free matter for the blind and physically handicapped," and appear to be given a low postal priority in some areas or at some times, causing troublesome delays.

   Reader Suggestions--Revise postal priorities so that braille users receive books in a timely manner.

2. Problem--Braille users' reading plans are sometimes frustrated due to misplaced and incorrect shipments, and to irritating delays which stem from the fact that a single braille volume is generally prepared in several distinct volumes, which due to their size cannot all be packaged in the same shipping case. Though the various cases may all be sent out at the same time, the case containing the third and fourth volumes may arrive at a subscribers' home before the one containing the first and second volume.

   Reader Suggestions--Place a greater priority on the delivery of reading matter to the print handicapped, and package all volumes of a braille book together. (That may involve new shipping cases for the braille books, but it would prevent needless frustration.)

B. Receiving and Returning Materials Independently	MEDIUM CONCERN

Problem--Braille, though a tremendous communication medium for those who are able to utilize it, is cumbersome and heavy, necessitating that braille users have some means of collecting packages from and returning them to a post office.

OVERALL RANK

Reader Suggestions--Organize a network of volunteers to pick up and deliver braille materials, where the postal service does not or cannot do this.

C. Storing and Handling Braille Materials Independently LOW CONCERN

Problem--Braille volumes generally take up twenty to thirty times as much space as the same text in regular print. The bulkiness, weight and mass of braille materials, though not prohibitive, makes it difficult for users to handle them comfortably and independently. Consequently, getting assistance handling and storing the materials is essential, especially for the older readers who have limited strength and dexterity.

Reader Suggestions--Provide volunteers to assist both in users' homes and in libraries, while exploring ways of condensing braille onto magnetic tapes or of producing paperless braille.

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II. Summary and Assessment of Problems

The overriding concern in the area of handling and using braille materials is the bulkiness, weight and mass of the material. While the last issue of Playboy magazine was ½" thick in regular print, it was 12-14" thick in braille, and took up seven volumes. Not only does this aspect of braille books and magazines make them difficult to handle easily and to receive and return independently, but it is also responsible, in part, for the delays in the receipt of braille reading materials. The size of the books makes it impossible to package all volumes of a given book together, which, as already noted, sometimes causes frustrating delays, upsetting subscribers' reading plans. Although not widely known by braille users, technological innovations are moving forward to prepare paperless braille on the same magnetic tape cassettes as those used for recording. Paperless braille is played back tactually through a special transitory braille output device which resembles a cassette player and speech can be included on the same cassette.

While, on the whole, the waiting time for braille users does not appear to be unduly long--85% of the users reported that their materials arrived within two weeks from the time the request was made--20% of the braille users were displeased with the waiting time. Unfortunately, what is in some respects a great cost savings to the regional libraries--namely that all of the reading materials are shipped "free matter for the blind and physically handicapped" to NLS subscribers--is also a drawback in that, as mentioned above, such materials are often given a low postal priority. By revising the priorities and ensuring that different volumes of single books are not sent under separate cover, the waiting time might be reduced to a level that is more satisfactory for everyone.

SATISFACTION WITH THE BRAILLE PROGRAM

ISSUE: QUALITY - QUANTITY & CONTENT OF AVAILABLE MATERIALS

I. Problems Cited and Solutions Suggested by Subscribers to NLS — OVERALL RANK

A. Variety of Selections — VERY HIGH CONCERN

Problem--The lack of adequate materials to choose from is a very serious concern of braille readers: many topical areas are not covered adequately, including professional texts, intellectually stimulating books and leisure reading for adults and youths.

Reader Suggestions--Obtain formal reader recommendations regularly to ensure that the expressed reading interests of braille users are being met, expand the press braille selections; provide more short run and custom transcription of braille.

B. Timeliness of Selections — HIGH CONCERN

Problem--The lack of timely braille materials, ranging from popular consumption items such as magazines and best sellers to specialized works such as legal documents and scientific research data for blind professionals, greatly limits the potential use of braille, by reducing the motivation of the print-limited to master braille and to utilize the NLS.

Reader Suggestions--Provide a more timely braille service; accelerate the production process.

C. Quantity of Selections — HIGH CONCERN

Problem--Though somewhat less of a problem than the inadequacy of choices, the insufficient quantity of specific titles has resulted in troublesome delays in some instances.

Reader Suggestions--Expand interlibrary loan services; and make sure each library has at least one copy of each NLS text, as well as modern copying capability.

OVERALL
RANK

D. Degree of Difficulty of Language

MEDIUM
CONCERN

Problem--About a third of the braille users found the level of the language in the available selections to be too difficult. Similarly, many people would have liked to have shorter pieces to choose from.

Reader Suggestions--Supply a wider range of materials to meet the reading needs and interests of a more diverse audience.

II. Summary and Assessment of Problems

According to subscribers, the problems pertaining to braille use requiring the most attention center around: 1) the ease, currency and timeliness of obtaining braille materials--nearly 40% of the braille users said the available NLS materials were not current enough; and 2) the quantity, scope and variety of available materials--nearly 25% of the braille users said there were inadequate selections in the subject areas represented, and that the degree to which different interest areas are represented was similarly deficient.

For the producer--NLS--some of these difficulties, despite episodic technological innovation in the last ten years to develop ways to prepare braille more easily, cheaply and quickly, result from the limited demand. Fewer visually impaired persons appear to be learning braille now with the advent of mainstreaming in public schools, the deployment of special high magnification low vision aids and more recorded materials. (Devices that read aloud using synthetic speech, such as the Kurzweil Reading Machine, are now becoming available in large libraries as research tools.) In addition, persons who become visually impaired in their older years typically do not learn braille for purposes other than note-taking, because braille skills are not easily acquired and neuropathy is a problem associated with age.

Other production problems are the decline in experienced hand braillists and sighted copy editors,* limited production capacity to prepare economically feasible large-scale press runs, and increasing costs of paper, labor and distribution.**

Presumably the level of difficulty of the language is less of a problem for the professionals among the braille users than it is for the visually impaired population as a whole, since it requires a level of motivation and training to become adept at reading braille beyond note-taking. But if the aim is to expand the use of braille, it might be well to select readily intelligible materials, as well as the more specialized and difficult selections for the more advanced braille users. Clearly, if the materials are either too difficult, too general or too simplistic, the NLS subscribers will become frustrated and turn their attentions elsewhere. Similarly, if they are unable to keep up with their peers, and lack a forum in which to share their reading experiences--whether they be professionals or not--they will undoubtedly seek other, more accessible reading alternatives. The needs of children must also be considered. Given a limited budget, however, NLS must establish priorities that will probably not permit the satisfaction of everyone's needs.

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* The number of braillists and proofreaders currently certified by NLS as achieving a set standard of competence is in the range of 400-600.

** The average cost of a press braille volume with an average of 200 braille pages, on both sides of the paper (equivalent to 100 print pages) is about $40. The average cost of a 100 page one-sided braille volunteer produced volume (about 45 print pages) is about $25.

On the brighter side, the aspects of braille materials which, happily, are not problematic are the quality of press braille supplied--i.e., the grade, size, interpoint format, spacing and so on. Neither are there serious problems with the quality of the bindings or the durability of the materials.

By continuing the work already begun by NLS and others in the area of technological innovation, it may be possible in the not too distant future to develop a highly efficient and timely means of producing braille which will allow for the necessary diversity and quantity of texts that is currently lacking. We note that the NLS is currently providing financial support for the advancement of braille technology, such as the development of automated stereograph plate embossers which will speed up the production of braille, and may wish to expand this support. The NLS is also an active participant in the Braille Authority of North America and a liaison with the British "Authority" on a common code, which are exploring the revision of the braille code, the use of grade 1, and so on. In virtue of these affiliations, the NLS is in a position to exert strong leadership in the rapid revision of the braille code, in such a way as to retain the advantages braille offers its readers over recordings, while allowing faster and cheaper transcription of braille by computer.

The alternative to pressing for such innovations is to risk the eventual obsolescence of braille, and with it one of the primary means of achieving literacy for the congenitally blind. The other visually impaired persons who have learned to substitute braille for ink print would similarly be denied the active involvement in reading they now enjoy. And finally, another advantage of braille that would be lost, which has been discussed elsewhere in connection with the advantages of ink print as a reading medium and is applicable here too, is the privacy that ink and braille afford their users, unlike Talking Books and other auditory forms of reading.

Table A8-1

Satisfaction With the Talking Book Program by Region

	Total U.S.	Region North East	South	North Central	West
	Percent				
Used Talking Books or Magazines in the Last Year	96	96	95	96	98
Materials					
Enough variety of subjects	84	92	80	85	78
Enough copies within subject	78	81	75	83	71
Materials are current enough	86	84	87	86	87
Materials are too difficult in language	20	15	21	27	14
Quality of recordings is satisfactory	92	90	88	98	93
Talking Book Equipment					
Presently Uses					
Record Player	90	94	85	92	87
Cassette Player	40	39	40	36	45
Condition of Equipment is Satisfactory					
Record Player	88	88	90	91	83
Cassette Player	84	82	86	81	86
Talking Book Topics (TBT)					
Frequency of Use					
Read regularly	43	39	45	42	49
Occasionally	24	29	19	26	21
Almost never/Never	27	28	23	31	23
Never receive	6	4	13	*	6
Total	100	100	100	100	100
Content of TBT					
Tells enough to order	94	92	99	91	92
Tells enough about length and difficulty	73	86	73	66	68
Provides accurate descriptions	90	91	84	91	94
Ordering					
Usually order specific titles	82	81	79	79	90
Usually ask librarian to select	31	24	30	41	26
Usually Order By					
Telephone	25	29	20	30	21
Mail	47	52	42	41	57
Someone else	28	18	38	30	22
Total	100	100	100	100	100
Receiving					
Waiting Time					
1-2 weeks	76	73	80	79	70
3-4 weeks	13	16	15	6	15
Longer than 1 month	11	11	5	15	15
Total	100	100	100	100	100
Usual waiting time is satisfactory	84	78	87	89	76

* Indicates less than 0.5%.

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